12TH SEPTEMBER 2023

FACULTY OF MEDICINE
UNIVERSITY OF PERADENIYA

PeMSARC'23

PERADENIYA MEDICAL SCHOOL
ANNUAL RESEARCH CONFERENCE

Book of Abstracts

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- Dr Samidi Navaratna
- Prof Duminda Yasaratne

Conference Secretary

- Dr Lakshika Pathirana

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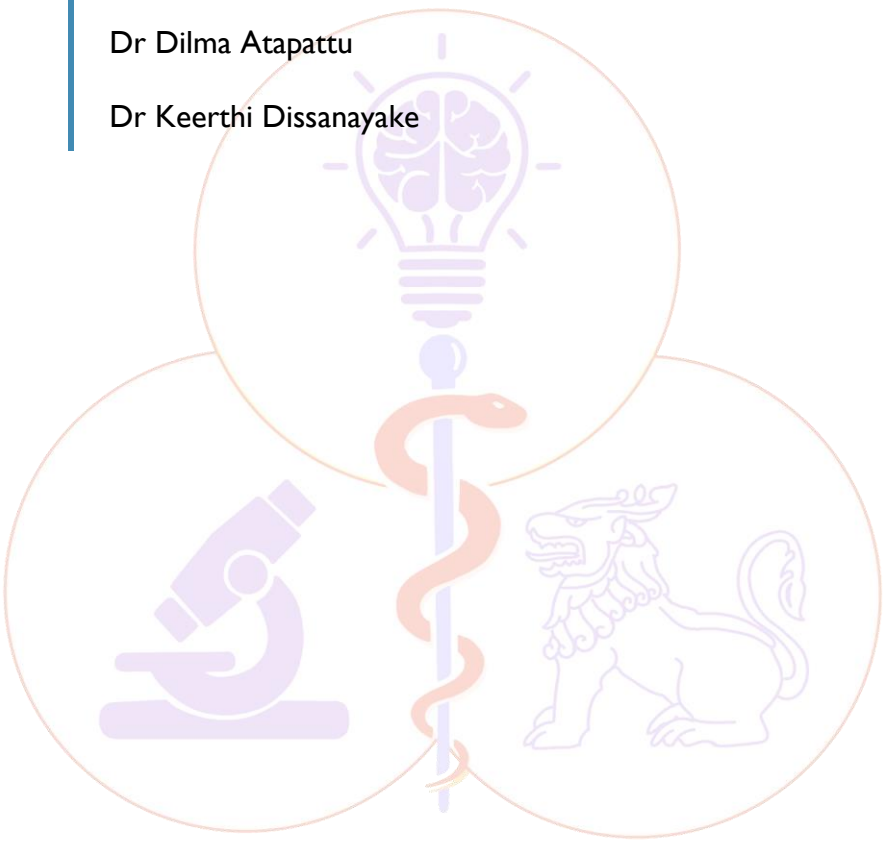

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Student Secretary

Mr Shakthi Senarathne

Student Treasurer

Miss Devini Bandara

Student Committee Conveners

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Mr Nethsara Kekulawala | Editorial

Mr Thumula Rathnayake | Editorial

Mr Malaka Samarasinghe | Media & IT

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Mr Beshan Waduge
Miss Dahami Hettithanthri

Programme

PeMSARC'23 | Tuesday, September 12, 2023

TIME	EVENT
07.45 AM	Arrival of Guests
08.00 AM	Ceremonial Procession
08.15 AM	Inauguration Ceremony
08.25 AM	Welcome Speech by Co-Chairperson | PeMSARC *Dr. Samidi Navaratna*
08.30 AM	Address by the Dean | FOMP *Prof. Vasanthi Pinto*
08.35 AM	Address by the Vice Chancellor | UOP *Prof. M.D. Lamawansa*
08.45 AM	Address by the Chief Guest *Emeritus Prof. Nimal Senanayake*
09.15 AM	Faculty & Academic Staff Research Excellence Awards 2023
09.30 AM	Address by the Student Chairperson | PeMSARC *Mr. Sachith Keragala*
09.35 AM	Keynote Speech *Prof. Neelika Malavige*
10.05 AM	Vote of Thanks by Secretary | PeMSARC *Dr. Lakshika Pathirana*
10.10 AM	MORNING TEA
10.40 AM	Thematic Research Presentations
11.40 AM	Oral Research Presentations | Session 01
12.30 PM	LUNCH
01.15 PM	Oral Research Presentations | Session 02
02.45 PM	AFTERNOON TEA
03.00 PM	Oral Research Presentations | Session 03
04.00 PM	End of Programme

Message from the Vice Chancellor

Prof. M.D. Lamawansa

I am delighted to extend my wishes to the Peradeniya Medical School Annual Research Conference 2023 (PeMSARC'23). The commitment exhibited by the academic community of the Faculty of Medicine to expand the research culture is admirable.

International ranking systems, like those used by Times Higher Education, take into account a variety of factors, including an institution's research output, the quantity of published research citations, international research collaborations, and the commercialization of research. Despite being ranked among the top 5% of universities worldwide, the University of Peradeniya nevertheless falls behind in research. While citations have received high rates, the research has received low marks. Therefore, we need to find ways to develop a stronger research culture.

The university has recently taken a number of actions, including providing multidisciplinary research grants, funding for publications, educating staff members in grant application, and disseminating information about national and international grants. As university funds are not sufficient to conduct all the research that academic staff is capable of, we must make collective efforts to attract external grants. The newly established sub-office under the University Research Council has taken some initiatives in this direction and hopes you will use the opportunities created.

Hosting a research conference of this nature enhances the institution's reputation for academic excellence. I commend the Dean of the Faculty of Medicine and the PeMSARC'23 organizing committee for their efforts in putting together this event.

I look forward to witnessing the contributions to new knowledge that will emerge from PeMSARC'23.

Prof. M.D. Lamawansa, MS, FRCS (Edin), PhD
Chair Professor of Surgery
Vice Chancellor
University of Peradeniya

Message from the Dean

Prof Vasanthi Pinto

It gives me great pleasure to send this message to the 2nd Peradeniya Medical School Annual Research Congress, which has been a successful catalyst in stimulating an interest in research among our medical students.

Although student research has been an integral part of the academic curriculum in our faculty, this discipline has not been given official recognition. Now, for the second year in succession, students have been granted the opportunity to showcase their research to the entire faculty and have their articles published in the book of proceedings, whilst the best research papers will be selected for awards. This incentive afforded to all students will definitely mould them into research-oriented undergraduates with the spark that ignites the discovery of new concepts, ideas and theories, launch them into an excellent clinical career with an edge over their compatriots in other universities and prove to be of dividends in their future careers.

We are privileged to have two eminent medical professionals as guests for this event. The Chief Guest, Prof. Nimal Senanayake, a pioneering researcher who has published high-quality papers in prestigious magazines like the Lancet and a former Dean of our faculty, will add lustre to this event with his presence.

The guest of Honor, Prof. Neelika Malavige, will deliver the Keynote Address, and she, who is an internationally renowned scholar cum clinician, will be an inspiration for students to scale the upper echelons of research.

I look forward to a productive conference of stimulating and productive research and wish the sessions all success! Thank you!

Prof. Vasanthi Pinto, MD, FRCA, FCARCSI
Professor of Anesthesiology & Critical Care
Dean of the Faculty of Medicine
University of Peradeniya

Message from the Chief Guest

Prof Nimal Senanayake

"Research is something that everyone can do, and everyone ought to do. It is simply collecting information and thinking systematically about it" wrote Raewyn Connell – Australian sociologist, former professor at the University of Sydney.

In the field of medical sciences, the process of diagnosis entails collecting information (by way of history, physical examination, and/or investigations) and thinking systematically about it (to find a meaningful interpretation in terms of pathophysiology and aetiology). Thus, research and the practice of Medicine are inseparable. That is why the student of Medicine must be oriented towards research from the very beginning. One might not find something startling every time one examines a patient or a microscope slide, but the mind trained in research will, from time to time, pick a new phenomenon that is of relevance to the entire scientific world. 'Research is seeing what everybody else has seen and thinking what nobody else has thought' – Albert Szent-Györgyi, Noble Prize Laureate.

I congratulate the PeMSARC for the initiative to found an Annual Research Conference in Medical Sciences. This is another milestone, and another first for the Peradeniya Medical School. I am happy to note students taking an active part in the organization of the event. I look forward to this opportunity of participating in the Faculty Research Conference.

Emeritus Prof. Nimal Senanayake, MD, PhD, DSc
Emeritus Professor – Department of Medicine,
Faculty of Medicine
University of Peradeniya
Chief Guest of PeMSARC'23

Message from the Co-Chair

Dr Samidi Navaratna

As we gather for the Peradeniya Medical School Annual Research Conference (PeMSARC'23), I cannot help but look back at the short yet remarkable journey we embarked upon. Our inaugural session held last year was a testament to the dedication, passion, and collective efforts of our academic community. We took a bold step in creating a platform for the exchange of ideas, research, and innovation within the field of medicine, and the response was nothing short of spectacular. The importance of a research conference of this nature is multifaceted and extends to the undergraduate, postgraduate, academic, and professional communities.

With PeMSARC'23, we embark on a new chapter, building upon the foundation we laid last year. PeMSARC'23 represents the culmination of months of hard work, dedication, and profound commitment by the PeMSARC'23 organizing committee, which consists of a dedicated team of academic and non-academic staff members and a highly efficient group of medical students.I do not doubt that this year's conference will be even more successful and have an even greater impact on the field of medicine. As we continue to grow, let us remain committed to the spirit of research collaboration, curiosity, and excellence that has brought us to this point.

I would like to express my heartfelt gratitude to our esteemed Vice-Chancellor and Dean, Professor M.D. Lamawansa, and Professor Vasanti Pinto, for their unwavering support and encouragement. My sincere thanks also go to my co-chairperson, members of the executive committee, chairpersons, and members of all sub-committees of the PeMSARC'23 for their continued support and dedication in organising this event. A special note of appreciation goes to the reviewers and judges, who have played instrumental roles in making this event a resounding success. I would like to extend my heartfelt gratitude to the Peradeniya Medical School Alumni Association – United Kingdom (PeMSAA- UK) for their generous financial support for the PeMSARC'23 pre-congress workshop and would like to thank them for being a part of this remarkable journey. Furthermore, I appreciate all the arduous efforts of students and non-academic staff members. Together, we are shaping the future of medical research and education, and I am excited to see where our collective efforts will take us in the years to come.

I look forward to celebrating the achievements and discoveries that await us at PeMSARC'23.

Dr. Samidi Navaratna, DCH, MSc, MD
Senior Lecturer in Community Medicine
PeMSARC'23 Conference Co-Chair

Message from the Co-Chair

Prof Duminda Yasaratne

"Science is based on evidence, and research is the tool to find evidence".

It would be imperative for an apprentice of any scientific discipline to engage in research to find evidence based solutions to problems presented, as there would not be progress in any discipline without scientific observations and experiments. This is more so for medical practitioners where opinions and directives often on life and death matters need to be carefully founded on scientific evidence.

PeMSARC, a conference chiefly organized by students for students, provides the platform to hone the conceptual, analytical and dissemination skills of novice medical researchers by supplementing to the CLR module of undergraduate curriculum. Backed by the unparalleled success of the inaugural conference last year, I am proud to be a member of the team and work along with immense young talents organizing PeMSARC'23, the second annual research conference of Faculty of Medicine, University of Peradeniya.

The conference will showcase the research work of undergraduates, postgraduates and academic staff members of the faculty, while also providing stage for innovations by talented non-academics. Taking one step ahead, this year we have opened the conference for scientific papers from other medical faculties and health units around the country. Precongress workshop on 'Research mindset and dissemination' was already conducted successfully.

I congratulate the students and staff members of the organizing committee for getting together a wonderful program for PeMSARC'23 and all oral and poster presenters for their scientific contributions, while wishing for a pleasurable academic and social experience for all participants.

Prof. Duminda Yasaratne, MD, MRCP
Professor in Respiratory Medicine
PeMSARC'23 Conference Co-Chair

Message from the Secretary

Dr Lakshika Pathirana

PeMSARC'23 is the 2nd Research Conference of the faculty of Medicine, University of Peradeniya. This brings a great opportunity for medical undergraduate, postgraduate students and the academic staff to showcase their research in one platform.

Research can be undertaken in any kind of environment, as long as the researchers have the genuine interest and the proper mindset for it. Exploring for new knowledge is the key to the advancement of technology and it assists the progress of all disciplines. PeMSARC could be the first step for the young researchers in the discipline of medicine to share their earliest experiences in the pathway of seeking new knowledge, which will invariably contribute to the expansion across of the field of medicine.

While expressing my sincere gratitude to all the contributors, I wish to express my heartiest wishes to the budding researchers while congratulating the young energetic team behind the successful organization of PeMSARC'23.

I wish all participants a pleasant and a mind-enriching experience.

Dr. Lakshika Pathirana, MBBS, MPhil
Senior Lecturer in Anatomy,
Department of Anatomy, Faculty of Medicine, Peradeniya.
Conference Secretary PeMSARC'23

Message from the Student Chair

Mr Sachith Keragala

I am delighted to pen a few words as the Student Chairperson of PeMSARC'23. The saga of PeMSARC is still at its inception with the 2023 edition being the second iteration of the conference. However, despite its short history, PeMSARC has taken root within the student community as an integral part of Faculty life, and as an avenue for undergraduates to enter their foray into research presentation and dissemination.

As a member who witnessed the birth of PeMSARC in earlier years, I am extremely privileged to step up as its Student Chairperson and lead a capable and talented contingent of students, as well as liaising with the academic and administrative staff. I am extremely grateful for all the members of the organizing committee, for toiling day and night, in order to make PeMSARC'23 a reality. A special feature of PeMSARC since its inception is that it is a collective effort of all aspects of the faculty from staff to students.

PeMSARC'23 presents research work done by both undergraduates and postgraduates, with much being the debut of many individuals. We hope this will inspire more and more medical undergraduates to look at research as a career option, as well as to constantly engage in research in their future clinical careers.

Last but not least, I wish all the best for the saga of PeMSARC to keep writing many chapters in the years to come, and may it prosper and shine!

Mr. Sachith Keragala
President of the Peradeniya Medical Undergraduates' Research Committee (PeMURC)
PeMSARC'23 Student Chairperson

Keynote Speaker & Address

Keynote Speaker Introduction

Prof Neelika Malavige

MBBS (Col), MRCP (UK), AFHEA, DPhil (Oxon),
FRCP (Lond), FRCPath (UK), FNASSL
Professor in Immunology and Molecular Medicine,
Department of Immunology and Molecular Medicine,
Faculty of Medical Sciences,
University of Sri Jayewardenepura.

Prof. Neelika Malavige is a Professor of the Department of Immunology and Molecular Medicine, University of Sri Jayewardenepura, Sri Lanka and an academic visitor at the MRC Weatherall Institute of Molecular Medicine, University of Oxford. She also serves as the Head of the Global Dengue Program, at Drugs for Neglected Diseases initiative since July 2022. She is a member of the Executive Committee of the International Society of Infectious Diseases since 2020.

Neelika graduated from the University of Colombo, with a first class and several gold medals, and carried out her doctoral studies at the Weatherall Institute of Molecular Medicine, University of Oxford, which was funded by a Commonwealth scholarship. She was elected as the Fellow of the Royal College of Physicians in London in 2015, the Royal College of Pathologists in 2015 and the National Academy of Sciences of Sri Lanka in 2022.

Prof. Malavige leads a large research group working on dengue, and COVID-19, focusing on immunopathogenesis of and vascular leak in dengue and translating these findings into clinical trials. She served as an expert member on several government COVID-19 related technical advisory groups on public health response, control strategies, vaccine evaluation, regulation and vaccine deployment strategies. Prof. Neelika has secured many Sri Lankan and International grants for her work on dengue and COVID-19 and published extensively in these areas. She has won several national and international awards for her work such as the Third World Academy Science (TWAS) young scientist award in 2012, CVCD excellence awards for best young researcher in 2008 and has done many orations. . She has strong research collaborations with University of Oxford and her laboratory is a part of the A2CARES (Asian American Centers for Arbovirus Research and Enhanced Surveillance), which is one of the Centers for Research in Emerging Infectious Diseases, NIH, USA.

Message from the Keynote Speaker

I am deeply honoured to be the keynote speaker at the 2nd Peradeniya Medical School Annual Research Conference (PeMSARC 2023). This conference is paving the way to fulfil one of the greatest needs in our country right now, which is to enhance our research capabilities.

Research and innovations have been the key to a rapid economic growth and development of health care in all countries. To enable this, it is important to have regular

exchange of knowledge, discussion of key research findings and hypotheses, and also to understand how to set about finding answers to key research questions.

I am delighted to see enthusiastic participation of undergraduate students, who are the ones who can make the change. We need to make Sri Lanka a research and innovation driven country, enabling us to find solutions to our own problems. This will lead to a rapid economic growth and better living standards for all.

Pre-Congress Workshop

PeMSARC'23 Pre-Congress Workshop was held at the Faculty of Medicine Peradeniya as a live event on Tuesday, August 08, 2023, with the participation of around 300 students. The session was aiming towards expanding the knowledge of students on "Research Mindset" and "Research Dissemination".

TIME	EVENT	RESOURCE PERSON
01.00 PM	INTRODUCTION	
01.30 PM	Aims, Objectives & Questions: The What & Why?	Dr. Samidi Navaratna *Senior Lecturer, Department of Community Medicine, Faculty of Medicine Peradeniya.*
02.00 PM	Research Paradigm & Analysis: The How?	Dr. Keerthie Dissanayake *Senior Lecturer, Department of Anatomy, Faculty of Medicine Peradeniya.*
02.30 PM	Research Beyond Medicine: A Short Glimpse…	Prof. Janaka Ekanayake *Chair Professor, Department of Electric & Electronic Engineering, Faculty of Engineering Peradeniya.*
03.00 PM	TEA BREAK	
03.30 PM	Poster Presentation: How to make them stunning?	Dr. Damsara Nandadeva *Senior Lecturer, Department of Physiology, Faculty of Medicine Peradeniya.*
04.00 PM	Oral Presentation: How to make it outstanding?	Prof. Veranja Liyanapathirana *Professor in Microbiology, Department of Microbiology, Faculty of Medicine Peradeniya.*
04.30 PM	Q&A Session	
05.00 PM	END OF PROGRAMME	

LIVER AND BILIARY TRACT ANATOMY AND THEIR VARIATIONS

Dr. Jayamini Sri Jayarathna
Department of Anatomy, Faculty of Medicine, University of Peradeniya, Sri Lanka

The liver, being the largest organ in the body, weighs approximately 1500g. From the hilum or porta hepatis the main vessels and ducts enter the liver and usually contains the right and left hepatic ducts, the right and left hepatic arteries and the portal vein. It is the place where bile is synthesized, and the biliary drainage system consists of several ducts that run parallel to the portal venous supply to drain the different hepatic segments. The extrahepatic biliary tract of the liver consists of the right and left hepatic ducts, the common hepatic duct, the cystic duct, the gallbladder, and the common bile duct. It is usually joined by the main pancreatic duct to form a common channel and open into the hepatopancreatic ampulla (of Vater) in the duodenal wall.

The arterial supply of the liver comes from the hepatic artery, a branch of celiac artery. The cystic artery which supplies the gall bladder is a branch of the right hepatic artery. Venous system consists of hepatic veins and portal venous system. The cystic vein drains directly into the portal vein.

There are several anatomical variations in the ductal pattern among different populations as well as in the vascular architecture. Those haven't been studied extensively in Sri Lankans.

Here we discuss several descriptive studies done at the Departments of Anatomy, Radiology and Forensic Medicine, Faculty of Medicine, University of Peradeniya and Teaching Hospital, Peradeniya to observe and record the anatomical variations in the biliary tract through cadaveric dissections, observing autopsy specimens and radiological imaging modalities namely ERCP and cholangiograms along with relevant case reports we have come across during those cadaveric dissections.

We mainly investigate the variations in the insertion of right posterior hepatic duct according to Huang classification and as per preliminary data, the commonest found in all studies was insertion of right posterior hepatic duct to the right anterior hepatic duct (Huang A1) followed by insertion into the hepatic confluence/ trifurcation (Huang A2). Insertion of right posterior hepatic duct to the left hepatic duct (Huang A3) and to the common hepatic duct (Huang A4) was observed in some studies. Insertion into the cystic duct (Huang A5) was not observed in any of the studies. One case report is about an anomalous insertion of inferior mesenteric vein, a tributary of portal vein and the other is about an interlobar ligament between right and left lobes of the liver.

Knowledge of normal anatomy and the variants is important in diagnosing and treating disorders of the biliary tract and related vasculature. They will not only be used by the clinicians but also by the researchers to determine new research areas.

RECTAL CANCER – WHERE ARE WE TODAY?

Dr Kaushika Gunasekara
Department of Surgery, Faculty of Medicine, University of Peradeniya, Sri Lanka

Colorectal cancer (CRC) has the third highest incidence among cancers both globally and in Sri Lanka. Although this was considered a disease of the elderly, currently there is an increasing incidence of young patients (< 50 years) with CRC globally. CRCs are the second leading cause of cancer deaths.

Management of rectal cancers has evolved over the past few decades with improvements in both disease staging and treatment. MRI scan has become an essential component in the local staging of rectal cancer. This has led to the accurate characterisation of early tumours and locally advanced tumours, which warrant neoadjuvant treatment before surgery. Computed Tomography (CT) is the modality of choice to assess lymphatic spread and distant metastases.

To date, the standard treatment for operable rectal cancers is radical excision of the rectum along with the surrounding mesorectum. This concept of Total meso-rectal excision was introduced by Prof. Bill Heald in 1982. In the 1990s there was growing interest to add Radiotherapy before surgical excision to reduce local recurrence rates in locally advanced rectal cancers. Later on, chemotherapy was combined with radiotherapy further reducing the local recurrences. The addition of adjuvant chemotherapy after surgical resection further improved the outcomes. Minimally invasive techniques (Laparoscopy and Robotics) in rectal surgery have shown the benefits of early postoperative recovery.

Recently several novel concepts and treatment modalities have emerged enabling more individualized management of patients with rectal cancer. For early cancers local excision can be performed in the standard trans-anal method or by trans-anal endoscopic surgery (TES), trans-anal endoscopic microsurgery (TEMS), and trans-anal minimally invasive surgery (TAMIS). As these techniques do not harvest draining lymph nodes, preoperative staging plays a pivotal role in patient selection for such procedures.

With the use of neoadjuvant treatment complete tumour regression can be achieved in about 20% of patients. Total neoadjuvant therapy or the addition of consolidation chemotherapy after radiation increases the chance of complete tumour regression. With this has emerged the concept of organ preservation in rectal cancer in selected patients.

Over the last four decades, treatment of rectal cancer has evolved dramatically. Advancements in preoperative staging, surgical techniques, and novel chemoradiotherapy regimes have led to improved local recurrences and disease-free survival. With the availability of these numerous options and multidisciplinary approaches, modern-day rectal cancer management has become highly personalized.

THROUGH THE MICROSCOPE: TUMOUR MICROENVIRONMENT OF COLORECTAL CANCER WITH A FOCUS ON DNA MISMATCH REPAIR DEFICIENCY

Dr. Warunie Kosgallana
Department of Anatomy, Faculty of Medicine, University of Peradeniya, Sri Lanka

Colorectal cancer is a major cause of morbidity and mortality, being the third commonest cause of cancer and the second commonest cause of cancer deaths worldwide. An increase in incidence has been observed in developing countries, which has been noted in Sri Lanka as well through the years. Colorectal cancers show a wide array of characteristics and variable modes of aetiopathogenesis, the evaluation into which can aid the best possible personalised management, prognostic assessment and the decision-making regarding screening family members.

DNA mismatch repair system functions to correct errors made during DNA replication, the deficiency of which is a feature of cancers associated with Lynch syndrome, which is the commonest cause of hereditary colorectal cancers and around 15% of sporadic colorectal cancer cases.

Colorectal cancer patients from four tertiary care settings, namely the teaching hospitals of University of Peradeniya, University of Sri Jayewardenepura, Sir John Kotelawala Defence University and National Hospital Kandy are included in an ongoing study on clinicopathological characteristics and the immunohistochemical evaluation for DNA mismatch repair deficiency.

The study of the tumour microenvironment helps us to better understand colorectal cancers. Features indicative of the immune response against cancer, such as tumour infiltrating lymphocytes (found within the tumour) and peritumoral inflammation (adjacent to the tumour) may benefit decision making regarding novel therapeutic agents such as immune checkpoint inhibitors. Preliminary findings of our studies revealed a strong negative correlation between tumour infiltrating lymphocytes and the TNM stage of colorectal cancers, which is a well-recognised indicator of prognosis. However, a significant relationship could not be established with peritumoral inflammatory reaction.

Tumour budding, defined as single tumour cells or clusters of up to four cells within the tumour or at the invasive front is a feature associated with the invasiveness of a cancer. Our findings have shown significant relationship of this feature with invasion of cancer cells into the venous or lymphatic systems.

The detection DNA mismatch repair for colorectal cancers is mandatory in many countries though not done in Sri Lanka due to the lack of resources. A preliminary analysis of 76 colorectal cancer patients revealed eight (10.5%) with a family history of Lynch syndrome-related tumours and 20 (26.3%) that fulfilled the revised Bethesda criteria for Lynch syndrome. Right sided tumours were observed in 17 (22.4%) and mucinous type in eight (10.5%), which are features associated with DNA mismatch repair deficiency according to available literature. This highlights the need for evaluation of such patients in Sri Lanka.

Our studies will take the initiative in the identification of DNA mismatch repair deficiency in Sri Lanka and will further identify histopathological features which may be used in its prediction which will be of advantage in the low resource setting.

THE ROLE OF ZINC IN THE PATHOGENESIS OF GESTATIONAL DIABETES MELLITUS: IMPLICATIONS FOR PREVENTION AND THERAPEUTIC STRATEGIES

Dr. Dinesha Ambagaspitiya
Department of Biochemistry, Faculty of Medicine, University of Peradeniya.

Gestational diabetes mellitus (GDM), being the most common complication of pregnancy, affects 1 in 6 live births globally. Remarkably, the highest pooled prevalence of GDM was reported in South Asian countries (11.4%) and the prevalence of GDM reported in Sri Lankan literature aligns closely with the global statistics. The fundamental pathophysiological mechanism underlying GDM is the failure of beta cells to meet the augmented insulin demands necessitated by the insulin resistance induced by pregnancy-related hormonal alterations. Notably, several minerals, including zinc, chromium, iron, and copper, were identified as contributors to beta cell dysfunction.

Zinc plays a pivotal role in insulin synthesis, storage, and secretion, functioning as a "cellular second messenger" in the insulin signalling pathway. Extensive research supports the proposition that zinc deficiency is a contributory factor in the development and progression of both type I and type II diabetes mellitus. Furthermore, the literature has illuminated an inverse correlation between GDM incidence with lower maternal serum zinc levels, as well as with lower dietary zinc intake. This was observed in a case-control study conducted by us at Teaching Hospital, Peradeniya, where mothers with low serum zinc levels were noted to developed GDM 2.5 times more often than the mother with normal serum zinc levels. Moreover, the prevalence of zinc deficiency in a cohort of pregnant women from Teaching Hospital, Peradeniya was reported as 14.3%, according to a recent cohort study conducted by us, necessitating a thorough exploration of the role of zinc in GDM.

Zinc facilitates the storage and packing of synthesized insulin within the secretory granules until secretion. This process hinges on the high zinc concentration within secretory granules. Transportation of higher zinc levels into secretory granules relies on zinc transporter 8 (ZnT8), a transporter expressed predominately in pancreatic α and β cells. Downregulation of ZnT8 had demonstrated to have reduced insulin secretion in response to hyperglycaemic stimuli. As insufficient zinc levels may hinder adequate insulin secretion, expression levels of ZnT8 can be altered in GDM.

Moreover, existing literature highlights a decrease in insulin sensitivity associated with zinc deficiency, as evidenced by both *in-vivo* and *in-vitro* studies. This effect is attributed to the action of protein tyrosine phosphatases (PTPs), enzymes involved in dephosphorylating insulin, rendering it inactive. Zinc has been identified as an inhibitor of PTPs. In cases of zinc deficiency, PTPs are more active, leading to impaired intracellular responses to available insulin. Therefore, investigation into the activity levels of insulin receptors, intracellular cell signalling, and molecular trafficking in relation to zinc status could yield valuable insights into the zinc requirements during pregnancy as a potential therapeutic intervention for GDM.

A comprehensive understanding of the involvement of zinc on pathophysiology of GDM can empower healthcare professionals with enhanced insights, enabling the development of more effective strategies for the prevention and treatment of GDM.

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Oral Presentation Abstracts

OP – 01

ASSESSMENT OF SOCIODEMOGRAPHIC RISK FACTORS FOR THE SEVERITY OF DIABETIC FOOT ULCERS

Gunathilaka DGKL[1]*, Gamage MUA[1], Gayashan EV[1], Godawaththa GABM[1], Gunarathne ND[1], Gunasekara PGMK[1], Gunawardana GSA[1], Hasna MFF[1], Hettiarachchi SR[1], Hettige HDPL[1] , Peiris SPM[1]
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Introduction: According to the International Diabetes Federation's most recent figures, 8.5% of adults have diabetes mellitus. One of the most serious complications of diabetes is diabetic foot disease, which lowers quality of life and raises the risk of infections and non-accidental lower limb amputation. In order to lessen the burden of disease, it is crucial that people are aware of the risk factors.

Objectives: The objective of this cross-sectional study was to assess the sociodemographic risk factors for the severity of diabetic foot ulcers in patients with diabetic foot disease.

Methods: This descriptive cross-sectional study included 157 patients with diabetic foot ulcers who were being treated at the surgical unit of Teaching Hospital Peradeniya. The data was collected using an interviewer-administered questionnaire. The severity of the diabetic foot ulcers was assessed by direct observation by the interviewer, and they were classified according to the Wagner classification.

Results: According to this study, age (p=0.044) and alcohol consumption (p=0.036) had a significant association with the severity of diabetic foot ulcers, while the other mentioned sociodemographic factors didn't have any significant association with the severity of diabetic foot ulcers.

Conclusions: Our study's results showed that alcohol consumption and age had a significant association with the severity of diabetic foot ulcers but not with other sociodemographic factors that we considered. Therefore, we recommend conducting further research involving a wider population for further evaluation.

Keywords: *Diabetic foot ulcers, Risk factors, Wagner classification*

OP – 02

KNOWLEDGE ON COMPLICATIONS OF DIABETES MELLITUS AMONG TYPE 2 DIABETIC PATIENTS ATTENDING MEDICAL CLINICS IN A TERTIARY CARE HOSPITAL IN SRI LANKA

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Introduction: The prevalence of diabetes is increasing due to sedentary lifestyle, unhealthy eating habits and lack of exercise. Very few studies have been carried out in Sri Lanka to assess the knowledge of diabetic complications where a comparably high literacy level is recorded.

Objectives: To assess the knowledge about complications of diabetes mellitus among type 2 diabetes mellitus patients over 40 years who were attending medical clinics of Teaching Hospital Peradeniya during the year 2022.

Methods: This study was carried out as a descriptive, cross-sectional study and it was conducted over six weeks enrolling a total of 298 patients with diabetes mellitus. An interviewer-administered questionnaire was used to collect data. A percentage knowledge score was calculated, and the knowledge level was determined. Data was analyzed by the software package JASP version 0.16.4.1.0.

Results: A total of 168 females (56.37%) participated in the study. The mean age of the population was, 61.1±10.6years for females and 62.4±9.9 years for males. The mean overall knowledge score was 53.61% with a minimum of 11.76% and a maximum of 94.12%. Considering the study population, 61.06% had good overall knowledge on diabetic complications and only 38.92% had poor knowledge. Further, the mean knowledge scores for diabetic emergencies, and microvascular and macrovascular complications were 57.81%, 59.58% and 35.30% respectively. A total proportion of 71.4% and 70.8% had good knowledge on diabetic emergencies and microvascular complications, however, only 23.48% had good knowledge on macrovascular complications. There was a statistically significant (p value < 0.05) association between the level of education and knowledge.

Conclusions: Knowledge on diabetic complications was poor among diabetic patients. Knowledge on macrovascular complications was the weakest. There is a need to educate diabetic patients on complications with more focus on diabetic macrovascular complications because the study has found that there is a statistical significance with the knowledge and the level of education.

Keywords: *Complications, Diabetes mellitus, Knowledge, Medical clinics, Type 2 diabetes*

OP – 03

PREVALENCE AND RISK FACTORS OF ASTHMA AND ITS IMPACT ON THE STUDENTS UNDERGOING CLINICAL TRAINING AT THE UNIVERSITY OF PERADENIYA

Liyanage ALTR[1]*, Kulathunga PPU[1], Kumarasinghe SN[1], Kumari GHK[1], KumariWIA[1], Lakshika WRAI[1], Livinden S[1], Madhubashitha PKS[1], Madhumali HMP[1], Madhumali MAR[1], Madhushani JVAH[1] , Yasaratne BMGD[1]
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Background: Globally, asthma is a common chronic condition. The frequency of asthma among university students in Sri Lanka, notably at the University of Peradeniya has not been well characterized. This study aims to look into how common asthma is, what its risk factors are, and how it affects academic performance, athletic engagement, and social interactions among students undergoing clinical training.

Objectives: To assess the prevalence, risk factors of asthma, and the impact of asthma on academic activities, sports activities, and social life of students undergoing clinical training of the University of Peradeniya, Sri Lanka.

Methods: Students from faculties of medicine, dental science, and allied health sciences from the University of Peradeniya, who are undergoing clinical training participated in a descriptive cross-sectional study. Data were gathered using a convenience sampling technique and a self-administered internet survey (online questionnaire).

Results: The final analysis contained 229 replies in total. Chi square test was used to test the association between variables. The results showed that the incidence of asthma among the University of Peradeniya students enrolled in clinical training was 33.6%. Parental asthma history and allergies were both significant risk factors for asthma (p 0.001 and p 0.001, respectively). The presence of dampness or the absence of a ceiling in the room, the number of roommates, the maintenance of bed linens, the burning of mosquito coils, and contact with pets or other animals did not, however, show a statistically significant relationship with asthma. Additionally, involvement in sports, social activities, or academic pursuits was not significantly impacted by asthma.

Conclusions: According to this study, university students in the Faculty of Medicine, Faculty of AHS and Faculty of Dental Sciences at the University of Peradeniya, undergoing clinical training have a high frequency of asthma. These results add to the body of knowledge on asthma among university students in Sri Lanka and offer useful insights for university administration to provide specific healthcare facilities for these students.

Keywords: *Asthma, Impact, Prevalence, Risk Factors, University Life*

OP – 04

HAND GRIP STRENGTH AND FACTORS INFLUENCING THE HAND GRIP STRENGTH: A DESCRIPTIVE STUDY AMONG A YOUNG ADULT POPULATION IN SRI LANKA

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Introduction: Hand grip strength (HGS) is a metric that quantifies the strength and force exerted by the muscles in the forearm and hand while gripping, suspending, or pulling objects. It is a valuable measure for evaluating musculoskeletal function, identifying weakness, and assessing disability in individuals. HGS data provides insights into an individual's muscular strength, enabling the determination of their physical abilities and limitations.

Objectives: This study was carried out to explore if the HGS is associated with gender, selected hand anthropometry dimensions, employment status, alcohol consumption, physical activity, and body mass index (BMI) in a young adult population in Sri Lanka.

Methods: A descriptive cross-sectional study was conducted among 122 males and 234 females in the age range of 19–28 years at the KAATSU International University campus. A questionnaire was administered to collect sociodemographic data. HGS was measured from the dominant and non-dominant hands using a Camry (model EH 101) digital hand dynamometer. Participants were seated, HGS were taken twice and the average was entered into a Microsoft Excel spreadsheet. Further a Vernier caliper, ruler, and flexible tape were used to take hand anthropometry measures from both hands of participants. The data were analyzed using SPSS (Statistical Packages for the Social Sciences). A standard descriptive statistic was obtained (mean, standard deviation). Subsequently, the chi-square test and Pearson correlation tests were used to identify the association between influencing factors and dominant and non-dominant HGS.

Results: Results showed that the majority of the participants' (n=316) dominant hand is the right hand. The mean HGS in the dominant hand is 38.75±8.61 kg 36.57±7.64 kg in males and females, respectively. There is a significant mean difference ($p<0.05$) in HGS between males and females. Based on the results, there is a significant association ($p<0.05$) between alcohol consumption, physical activity, employment status, selected hand anthropometries, and BMI with the HGS of the dominant and non-dominant hands of the population, among them employment status, physical activity, alcohol consumption, BMI, and hand anthropometries such as hand length, hand breadth, and hand circumferences showed a positive correlation.

Conclusions: Gender, lifestyle choices (such as alcohol consumption and physical activity), employment status, BMI, and hand anthropometries are influencers of hand grip strength. These factors should be considered when assessing musculoskeletal functions, weakness, and disability based on their hand grip strength measurements.

Keywords: *Body mass index, Dominant hand, Hand anthropometry, Hand grip strength, Musculoskeletal*

OP – 05

KNOWLEDGE AND ATTITUDES REGARDING HOMOSEXUALITY AND ASSOCIATED FACTORS AMONG PRE-CLINICAL MEDICAL STUDENTS AT THE FACULTY OF MEDICINE, UNIVERSITY OF PERADENIYA

Weerasekara OWLK[1], Uyangodage AS[1*], Wanninayake WMTN[1], Warnasooriya DGH[1], Wasala WMBS[1], Weerakkodi KGDT[1], Weerakkody WABK[1], Weerasinghe SMIP[1], Weerasinghe WMTM[1], Weerasinghe DPTM[1], Gurung S[1], Wangchuk K[1], Tshering K[1], Gunawardane DA[2]

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Introduction: There is a marked deficit of studies on knowledge and attitudes regarding sexuality and sexual minorities among medical professionals and students in Sri Lanka. Inadequate knowledge and negative attitudes of healthcare workers towards homosexuality prevent homosexual individuals from accessing healthcare. Therefore, improving attitudes is essential to avoid providing suboptimal care to such patients and this study will uphold positive considerations on homosexuality.

Objectives: To assess the knowledge and attitudes regarding homosexuality and associated factors among pre-clinical medical students at the Faculty of Medicine (FOM), University of Peradeniya.

Methods: This analytical cross-sectional study was conducted among pre-clinical medical students of FOM University of Peradeniya, recruiting 424 participants from 4 enrolled batches using the convenience sampling technique. Outcomes were measured using Sex Education and Knowledge about Homosexuality Questionnaire (SEKHQ) and the Attitudes towards Homosexuality Questionnaire (AHQ). The data was anonymously obtained through a Google Form. Data analysis was done using JAMOVI version 2.3.21. Associations were tested using independent sample t-test, one-way ANOVA, and Pearson's correlation coeffiecient. A p-value less than 0.05 was considered statistically significant.

Results: The majority had a positive attitude towards homosexuality (74.1%). But only 14.9 % had more than 50% of knowledge scores. The association between knowledge and attitudes scores was -0.409 ($p<0.001$), indicating a moderate, statistically significant, inverse correlation between knowledge and negative attitudes. Knowledge was associated with religion ($F=3.62$, $p=0.025$) and sexual orientation ($F=13.65$, $p<0.001$). Attitudes were associated with sex ($t=-2.317$, $p=0.021$), sexual orientation ($F=7.74$, $p=0.004$), religion ($F=5.91$, $p=0.003$), academic year ($F=4.184$, $p=0.007$) and age groups ($t=2.33$, $p=0.020$).

Conclusions: Although most subjects possessed less knowledge about homosexuality, the majority had positive attitudes toward homosexuality. Knowledge and attitudes were positively associated. Religion and sexual orientation were associated with knowledge regarding homosexuality and sex, sexual orientation, religion, academic year, and age were associated with attitudes regarding homosexuality.

Keywords: *Attitudes, Homosexuality, Knowledge, Medical Students, Peradeniya*

OP – 06

BODY DISSATISFACTION AND ITS SOCIOCULTURAL ASSOCIATIONS AMONG FIRST YEAR STUDENTS IN THE UNIVERSITY OF PERADENIYA

Bandaranayake BMGK[1]*, Bandara KMSP[1], Bandara PMMK[1], Bandara KMHD[1], Bandara RAGWMCP[1], Bandara AHMSK[1], Balasuriya BMDU[1], Boralessa SD[1], Buddhika IMN[1], Dissanayake DS[2]

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Introduction: Body dissatisfaction (BD) is a multifaceted construct arising due to the discrepancy between a perceived ideal and one's actual appearance and is known to have significant negative physical and psychological impact. It is influenced by biological and sociocultural factors notably body mass index (BMI), sex, pressure from media, family, and peers, internalized thin (TI) and athletic ideals (AI), which are still poorly understood in a Sri Lankan context.

Objectives: To explore the perception of body image and the other sociocultural factors influencing BD among first year university students.

Methods: First year students were systematically sampled from all 9 faculties of the University of Peradeniya. A self-reported questionnaire including the Body Image Questionnaire and the Sociocultural Attitudes towards Appearance Questionnaire were used. Independent sample t-test was performed to compare BD in the sexes. Associations between variables were determined using Pearson chi-square and correlation studies.

Results: The study comprised 330 respondents between the ages 20-25 years of which 59% (n=195) were female. Females were more dissatisfied with their body than males ($T_{324.979}$=3.375, p=0.001). BMI was significantly associated with BD in both sexes (p<0.001). Notably, 39% females and 19% males skipped meals to lose weight. Females showed higher TI internalization and males showed higher AI internalization. Family, peer, media pressure and TI internalization were significantly associated with BD in females (p<0.001). Only peer pressure was significantly associated in males (p<0.01).

Conclusions: Body dissatisfaction is prevalent among university students of both sexes although females appear to be affected more. Females showed more investment towards weight-changing behaviors. In keeping with western models, female dissatisfaction was affected by internalizing a TI while for males it was due to an AI. The role of media in mediating BD is of significance and may be a potential area for targeted interventions.

Key words: *Athletic-ideal, Body dissatisfaction, Sociocultural influences, Thin-ideal*

OP – 07

POST PANDEMIC STRESS IN MEDICAL STUDENTS IN SRI LANKA

Ratnayake TD[1]*, Rathnatunga TP[1], Randika DAT[1], Rupasinghe RAPS[1], Ritha MF[1], Ruwanthi WAT[1], Raveendra J[1], Rina MFF[1], Ranathunga US[1], Nilmini TGN[1], Ravichandran T[1], Navaratna S[2]

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Introduction: The Covid-19 pandemic has led to significant changes in university systems worldwide, including the adoption of online teaching to ensure program continuation. Assessing the post-pandemic psychological impact on medical students was crucial in this setting.

Objectives: To determine the prevalence of perceived Covid-19 related psychological stress, its causes, associated risk factors, and related coping mechanisms among medical students in Sri Lanka.

Methods: This descriptive cross-sectional study involved 662 medical students randomly selected from five medical faculties in Sri Lanka. The participants completed a Google form-based questionnaire consisting of four sections, including the PSS-10-C and Brief-COPE scales. The statistical analyses employed in this study were one-way between-subjects ANOVA, Mann- Whitney U test and Spearman's rank correlation.

Results: Among medical students, 16.5% had high pandemic-related perceived stress, 79.5% had moderate stress, and 3.9% had low stress. Perceived stress didn't vary significantly based on sex, residence, family type, or relationship status. However, final-year students experienced higher stress than lower-year students ($F = 6.953$, $p < 0.001$). Atheist students had higher stress than Buddhists ($F = 4.302$, $p = 0.02$), and students from Peradeniya had lower stress than Colombo, Kelaniya, and Ruhuna universities ($F = 6.368$, $p < 0.001$). Active coping was the most common coping mechanism (80.21%), while substance use was the least used (24.16%). Male students reported more problem-focused coping ($z = -2.85$, $p = 0.004$), while female students used more avoidant coping ($z = -2.15$, $p = 0.032$). Final and fourth-year students used more emotion-based coping than first and second-year students ($F = 7.423$, $p < 0.001$). Students from boarding places used more avoidant coping than those in hostels or at home ($F = 5.996$, $p = 0.003$).

Conclusions: The prevalence of Covid-19 related perceived stress in medical students of Sri Lanka was high. Being of a higher study year, being an Atheist and being from the Universities of Colombo, Kelaniya and Ruhuna were relative risk factors of pandemic related perceived stress among medical students of Sri Lanka. Male students used relatively more problem-focused coping for pandemic related stress, while female students and students from boarding places used avoidant based coping mechanisms more. Students of higher study years used relatively more emotion- based coping.

Keywords: *Covid-19, Medical students, Stress*

OP – 08

SOCIO-DEMOGRAPHIC AND MEDICO-LEGAL ASPECTS OF FEMALE VICTIMS OF SEXUAL ASSAULT UNDER THE LEGAL AGE OF CONSENT WHO PRESENTED TO TWO PERIPHERAL MEDICO-LEGAL UNITS IN SRI LANKA

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Introduction: Consenting age for sexual intercourse differs from country to country and it is 16 years in Sri Lanka. There are only a few studies done among the victims of sexual abuse, especially in the areas that are covered by district general/base hospitals in Sri Lanka.

Objectives: The objectives of the study were to analyse the socio-demographic profile and medico-legal aspects, such as type of act, type of genital and physical injuries, sequelae of the assault, and the relationship to the assailant, among sexually abused victims.

Methods: This retrospective descriptive study was conducted on all sexually abused female victims of age less than 16 years who reported for medico-legal examination to the Base Hospital Mahiyanganaya and the District General Hospital Embilipitiya, during the period from May 2019 to December 2021. Data was collected by scrutinizing the medico-legal documents and analyzed using SPSS statistical software version 20.0.

Results: Among the 226 sexually assaulted victims, 92.5% were school children, and 1.3% were preschoolers. The study showed vaginal penetration in 61.5% of victims. The assailant was a known person in 97.0% of cases and in 53.5%, the assailant was a romantic partner. Genital tears were reported in 53.9%. In the sample, 96.9% had no physical injuries. Urine test for pregnancy was positive in 7.9% of cases. Sexually transmitted diseases were identified in 3.1%. Following the assault, 29.2%, have permanently stopped attending school, and 12.4% had temporarily stopped attending school. Post-traumatic stress disorder was diagnosed in 16.8%. After the assault, 14.2% of victims were kept at the perpetrator's place, and 11.9% were admitted to the places under probationary supervision.

Conclusions: This study highlights the vulnerability of school children to being abused especially by a known person, who.were majorly challenged by educational disturbances with a minority ending up with pregnancy.

Keywords: *Child, Consent, Female, Pregnancy, Sexual assault*

OP – 09

KNOWLEDGE AND ATTITUDES TOWARDS WEARING MASKS DURING THE COVID-19 PANDEMIC AMONG MEDICAL STUDENTS ACROSS SELECTED ACADEMIC YEARS AT THE UNIVERSITY OF PERADENIYA, SRI LANKA

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Introduction: As a global health challenge COVID-19 has led to use of masks like cloths and surgical masks across populations. Correct understanding on the rationale of interventions will ensure that infection prevention practices are properly adhered to in preventing COVID-19.

Objective: This study was aimed to assess the knowledge and the attitude towards wearing masks during the COVID-19 pandemic among first, second and third-year medical students in the faculty of medicine, University of Peradeniya, Sri Lanka.

Methods: This was a descriptive cross-sectional study. An online (Google form based), self-administered questionnaire was used to assess demographic characteristics, knowledge and attitudes towards wearing masks during the COVID-19 pandemic for data collection. A Knowledge score (total 21) and an attitude score (total 40) was calculated and 50% or more from each total score was the cut off mark to define adequate knowledge and positive attitude. Pearson's chi square test was conducted to find out association. Data were collected from 23rd October 2022 to 23rd November 2022.

Results: The response rate was 62.5% (n=438). About (71.7%, n=314) of participants demonstrated adequate knowledge of wearing masks, with no significant difference between male and female students (p=0.409). Third-year students were the highest proportion of students having adequate knowledge (90.3%, n=102).There was a significant difference among the proportions of students who had good knowledge towards wearing masks in each academic year (p=<0.001). Overall, 97.9% (n=429) of participants had a positive attitude towards wearing masks, with similar percentages among male and female students and across all year groups.

Conclusion: While the majority of students had an adequate knowledge, nearly all the students had a positive attitude towards wearing masks. Further studies are required to assess the practice of wearing masks also.

Keywords: *Attitude, COVID-19, Knowledge, Masks, Medical students*

OP – 10

THE EXTENT OF UTILIZATION AND THE FACTORS INFLUENCING THE UTILITY OF LIBRARIES, E-LIBRARIES, STUDY AREAS, RECREATIONAL AND HEALTH FACILITIES, RELIGIOUS PLACES, AND THE WUS COMPLEX OF THE UNIVERSITY OF PERADENIYA BY UNDERGRADUATES OF THE UNIVERSITY OF PERADENIYA

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Introduction: The University of Peradeniya offers various facilities to its undergraduate students, including libraries, e-libraries, study areas, recreational and health facilities, religious places, and the WUS complex. Understanding the utilization patterns and factors influencing their use is crucial for enhancing their effectiveness in shaping productive citizens.

Objectives: We aimed to assess the level of utilization and factors influencing the use of university facilities among undergraduate students from the 15/16, 16/17, and 17/18 batches at the University of Peradeniya, while evaluating changes across faculties and genders.

Methods: A descriptive cross-sectional study was conducted among undergraduate students from the 15/16, 16/17, and 17/18 batches at the University of Peradeniya. Data on facility usage were collected using a self-administered online questionnaire distributed through Google Forms. A random sample of undergraduates was selected through stratified random sampling.

Results: The research had a response rate of 88.8% (355 participants), with significant gender differences observed in the utilization of libraries, e-libraries, university gymnasium, swimming pool, playground, and religious places. Over 50% of students used all facilities except for e-libraries, religious places, and the swimming pool. Notably, 31.3% of respondents did not use any library, and 68.7% preferred faculty libraries. E-libraries were used by 61% of males and 33.6% of females, mostly for entertainment (50.6%). Study areas were preferred for self-study (63.4%) and discussions (40%). A significant proportion of students utilized the university playground (54.4%), gymnasium (54.1%), and swimming pool (39.7%) but a considerable number of students used them occasionally. The university health centre was used by 69.6% for medical treatments (25.5%) and vaccinations (38.5%). The WUS complex had high overall utilization (76.6%).

Conclusions: This study highlights disparities in the utilization of university facilities among undergraduate students at the University of Peradeniya. Understanding these differences can help the administration to take steps to optimize the usage.

Keywords: *Gender, Undergraduates, University facilities, University of Peradeniya, Utilization*

OP – 11

FACTORS AFFECTING ACADEMIC PERFORMANCE OF STUDENTS IN THE FACULTY OF MEDICINE, UNIVERSITY OF PERADENIYA

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Introduction: Medical students in Sri Lanka are selected through a competitive examination. Despite having the same prior educational qualifications, their academic performance varies drastically. Academic performance may be affected by many factors such as gender, relationship issues, and participation in extracurricular activities among others, and could be modified for better performance. This study explored the multifactorial reasoning for this phenomenon.

Objectives: To evaluate the factors affecting the academic performance of medical students in the Faculty of Medicine, University of Peradeniya.

Methods: The study design was a cross sectional study. A self-made questionnaire was distributed as a Google Forms link. Simple random sampling was used to select the sample size of 219 out of the responses received from students of batches 17/18 and 18/19. Jamovi statistical software was used to analyse the data. The association between affecting factors and academic performance was analysed using t-tests and chi-square tests. The factors assessed were age, gender, number of attempts at Advanced and Ordinary level examinations, English knowledge, study preference, involvement in extracurricular activities, romantic relationships, and breakups.

Results: The response rate was 80.4%. Age and gender showed a significant relationship with academic performance. With advancing age, academic performance is reduced with older students performing worse compared to younger students. Female students showed better academic performance compared to male students. Our research also showed that personal factors such as relationships, break-ups have no significant effect on the academic performance of students. English knowledge had a positive impact on academic performance. Students whose medium of instruction was English at the General Certificate of Education Ordinary level and Advanced level examinations performed better compared to students whose medium of instruction was a non-English language. The study preference of the student, whether group or individual, was not significantly associated with academic performance. Engaging in extracurricular activities did not show a significant relationship with academic performance.

Conclusions: Academic performance is affected by factors such as age, gender, English knowledge and medium of instruction at advanced level while factors such as involvement in extracurricular activities, romantic relationships, breakups, study preference do not significantly affect academic performance.

Keywords: *Factors affecting academic performance, medical students, University of Peradeniya*

OP – 12

KNOWLEDGE AND ATTITUDES ON CONTRACEPTIVE METHODS AMONG FIRST AND SECOND YEAR UNDERGRADUATE STUDENTS OF UNIVERSITY OF PERADENIYA, SRI LANKA.

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Introduction: Contraception can be defined as the deliberate use of artificial methods or other techniques to prevent pregnancy following sexual intercourse. Studies done among university students worldwide have shown that the majority of students are aware of contraceptives but awareness, knowledge and attitudes on each contraceptive type is different. Furthermore, factors associated with good knowledge and attitudes toward contraception differ in various studies.

Objectives: The objective of the study was to assess perceived awareness, knowledge and attitudes on contraception among first- and second-year undergraduate students of university of Peradeniya.

Methods: A descriptive cross-sectional study was carried out among first- and second-year undergraduate students at the University of Peradeniya, using a self-administered online questionnaire for data collection.

Results: Out of the 400 respondents, 33.7% were male and 66.3% were female. As for the perceived awareness of contraceptive methods, the most well-known type of contraceptive was male condoms.

and the least known type was implants. In the knowledge section, more than 50% knew that condoms offer protection against sexually transmitted diseases. Only 33.5% knew that emergency contraceptive pills do not cause abortions if the woman is already pregnant. Regarding the attitudes on contraceptives, close to 45% felt embarrassed about buying contraceptives at a pharmacy. The vast majority believed that using contraceptives was not a sin.

Conclusions: Condom was the most well-known contraceptive method. Varying levels of knowledge and attitudes were present regarding the contraceptive types. Knowledge on contraceptive methods had a significant association with the GCE A/L study stream. Attitudes on contraceptives didn't show any significant association with sex, A/L study stream or year of study.

Keywords*:* *Contraception, Knowledge and attitudes, Undergraduates, University of Peradeniya.*

OP – 13

COMPARISON OF STUDENTS' PERFORMANCE AND PARTICIPATION IN PROBLEM-BASED LEARNING SESSIONS CONDUCTED ONLINE AND ONSITE AMONG SECOND-YEAR MEDICAL UNDERGRADUATES IN A STATE UNIVERSITY IN SRI LANKA

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Introduction: The approach to conduct problem-based learning (PBL) sessions shifted from the onsite to online due to the COVID-19 pandemic and financial crisis in the country. Studies assessing the effectiveness of PBLs when comparing the distance learning and onsite platforms are limited. This study assesses and compares the differences in students' performance and participation among these two platforms.

Objectives: To compare the performances and participation of online and onsite learning in PBLs among second-year medical undergraduates in a state university in Sri Lanka.

Methods: A descriptive cross-sectional study was conducted among the second-year medical undergraduates of the Faculty of Medicine, University of Moratuwa. Two student groups each were selected from online and onsite PBL groups. Students' performance was assessed in two methods; by comparing the intended physiology-related lesson learning outcomes (LLOs) of the PBL with those developed by the students during the PBL and by a pre- and post-session quiz given to assess the scores. Students' participation was assessed using facilitator feedback on spontaneous and prompted answering of students during the sessions.

Results: There were 25 students each in online and onsite groups. Out of the intended LLOs, 73.0% of the LLOs were developed by the onsite group when compared to 52.0% by the online group. There was no statistically significant difference in identifying the LLOs between online and onsite groups (p=0.244). The scores for pre-session and post-session quiz, onsite were 52.9% vs 59.9% and online it was 57.7% vs 72.0% respectively. There was no statistically significant difference between the online and onsite groups in the improvement from pre to post session quiz scores (p=0.72).The spontaneous answering of questions was higher in the online (70.83%) compared to the onsite groups (57.7%). The results were statistically insignificant between the online and onsite groups(p=0.59).Independent t-test was used to analyse the results using SPSS software.

Conclusions: Both online and onsite methods can be successfully utilized in PBLs. However further studies are recommended before long-term successful implementation.

Keywords: *Participation, Performance, Problem-based learning*

OP – 14

NORMATIVE VALUES FOR F-WAVES ADJUSTED FOR HEIGHT, AGE, SEX AND LIMB LENGTH IN SRI LANKAN ADULTS

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Introduction: In nerve conduction studies, the F-wave minimum latency is an electrophysiological index of motor conduction along the entire length of a motor axon and is useful in diagnosing peripheral neuropathies (e.g., diabetic polyneuropathy).

Objectives: We aimed to establish normative values for F-wave latencies adjusted for height, age, sex, and limb length for median, ulnar, peroneal and tibial nerves in Sri Lankan adults.

Methods: Motor nerve conduction tests, including F-waves, were done in the above nerves bilaterally, in 105 participants (66 men, 62.85%). Demographic (age, sex) and anthropometric (height and upper/lower limb length variables) data were also recorded. Four predictive multiple linear regression models were generated for each nerve, where the first equation started with height, the second adding age, the third adding limb length (for upper limb nerves) or sex (for lower limb nerves); and the final block adding limb length (for lower limb nerves) or sex (for upper limb nerves).

Results: The regression models are based on 207 median, 208 ulnar, 210 tibial and peroneal nerves each. The best regression models for upper limbs (median nerve: R^2=0.651, ulnar nerve R^2=0.680) had height, age and upper limb length as predictors; the best model for tibial nerve (R^2=0.683) had height, age and sex; and the best model for peroneal nerve (R^2=0.528) had height, age, sex and lower limb length ($p<0.001$ in all models). Height was the main predictor in all models.

Conclusions: We generated regression-based norms for F-waves, adjusting for the above variables. The models explained 53–68% of the variance of F-wave latencies. The individualized predicted scores can be used for better interpretation of F-wave studies in clinical settings. To easily interpret F-wave results, we presented an Excel-based calculator that generates predicted normal F-wave latencies, normal upper limits, and the standardized scores for each patient, upon entering the patient's data.

Keywords: *F-waves, Height, Limb length*

OP – 15

EFFECTIVENESS BETWEEN TISSUE DISTRACTION RELEASE WITH MOVEMENT AND ACTIVE RELEASE TECHNIQUE AMONG PATIENTS WITH NON-SPECIFIC NECK PAIN

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Introduction: Tissue Distraction Release with movement (TDR-WM) and Active Release Technique (ART) are two different treatment techniques used in physiotherapy.

Objectives: The aim was to compare the effectiveness of ART and TDR-WM technique to relieve neck pain.

Methods: This randomized clinical trial was conducted among 234 patients with non-specific neck pain referred to the physiotherapy unit, Teaching Hospital Peradeniya and National Hospital, Kandy, Sri Lanka. Participants were equally divided to receive ART or TDR-WM for five treatment sessions over 17 days with 3 days rest between sessions. Patients were asked to mark their pain severity on Visual Analogue Scale (VAS) following each session that best corresponds to their neck pain intensity at each visit.

Results: Patients ranged in age from 22 years to 55 years with mean of 36.35 ± 10.57. No significant differences in patients' baseline characteristics were found between groups. Wilcoxon signed-rank test showed a statistically significant change in pain following ART (Z = -8.85, p = 0.001) and TDR-WM (Z = -8.70, p = 0.001) treatments. Further, Mann-Whitney U test was performed to evaluate whether VAS score differed by the treatment technique. There was no significant difference between the two groups at all visits including the baseline visit (Z_1 = -1.4, p_1 = 0.15: Z_2 = -0.2, p_2 = 0.87: Z_3 = -0.2, p_3 = 0.82: Z_4 = -0.8, p_4 = 0.42: Z_5 = -0.8, p_5 = 0.40: Z_6 = -0.4, p_6 = 0.69).

Conclusions: Both ART and TDR- WM were significantly effective in treating neck pain. However, there was no significant difference between the groups. Future research focusing on TDR-WM versus other treatment options is needed to guide clinicians in their optimal treatment choices.

Keywords: *Active release technique, Non-specific neck pain, Pain intensity, Release with movement, Tissue distraction visual analogue scale*

OP – 16

EPIDEMIOLOGY OF PATIENTS FOUND TO HAVE THYROIDITIS FOLLOWING THYROID SURGERIES CONDUCTED AT THE TEACHING HOSPITAL PERADENIYA FROM 2012 TO 2021

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Introduction: Thyroiditis is an inflammatory condition causing structural and functional injury to the thyroid gland. The most common triggers for thyroiditis include infections, radiation, medications, and antibodies. Depending on the anatomical or functional alteration, it may exhibit hyperthyroidism or hypothyroidism. The main types of thyroiditis are Hashimoto's thyroiditis, granulomatous thyroiditis, and lymphocytic thyroiditis.

Objectives: The objective of this study was to identify the age, sex, and geographical distribution among patients diagnosed with thyroiditis following thyroid surgeries conducted at Teaching Hospital Peradeniya over a span of 10 years.

Methods: This study was conducted as a retrospective descriptive and analytical study using histopathological reports of thyroidectomy specimens sent by Teaching Hospital Peradeniya from 2012 to 2021, along with relevant bedhead tickets from 2018 to 2021. Data analysis was performed using IBM SPSS Statistics version 26. Associations were evaluated using the chi-square test, with a significance level of 0.05.

Results: Among 1298 samples, 31.82% of cases were diagnosed as thyroiditis. Among these cases, 9.01% were identified as Hashimoto's thyroiditis, 17.72% as lymphocytic thyroiditis, and 0.15% as granulomatous thyroiditis. Females accounted for 90.07% of all thyroiditis cases and the female-to ale ratio among patients was nine to one. The majority of cases (78.45%) were reported in the 31-60 years age group. No specific geographical distribution pattern of thyroiditis was identified. Age groups showed a significant association with thyroiditis ($p=0.004$), while no significant association was found between sex and thyroiditis ($p=0.057$).

Conclusions: Females predominate in all age groups and types of thyroiditis. The majority of thyroiditis cases were found in individuals between the ages of 31 and 60 years.

Keywords: *Age, Sex, Thyroidectomy, Thyroiditis, Sri Lanka*

OP – 17

HEART RATE VARIABILITY AND CARDIAC AUTONOMIC FUNCTIONS IN PATIENTS WITH TYPE 2 DIABETES COMPARED TO HEALTHY VOLUNTEERS

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Introduction: Cardiac autonomic neuropathy (CAN) is a life-threatening complication in long standing type II diabetes mellitus (T2DM). Heart rate variability (HRV) indices assist in early detection of CAN, whereas non-invasive cardiac autonomic function tests (CAFTs) quantify CAN.

Objectives: To evaluate the effect of chronic diabetes on HRV and CAFTs with respect to an age matched control group.

Methods: A case control study was done with 72 T2DM patients and 34 matched healthy individuals between 25-70 years. Five minute electrocardiograms from lead II were recorded in supine position using a 4-channel data acquisition system. Frequency and time domain analysis of HRV was performed on both groups. Levene's test was used to establish the statistical significance of variance. CAFTs (deep breathing test, isometric handgrip test, head tilt up test, and Valsalva manoeuvre) were also performed on both groups. Means and standard deviations were calculated for HRV parameters. Overall CAFT results were analysed based on a diagnosis of no CAN, early, definite or severe CAN.

Results: One, 18, 20 and 33 patients had severe, definite, early and no CAN respectively while only one control subject was diagnosed with early CAN. This difference of CAFT results was statistically highly significant ($f = 25.9$, $p<0.0001$). Frequency domain analysis of extracted NN interval (normal RR interval) data of HRV, indicated significant reductions in normalized low frequency (LF) power ($\bar{X}_{DM}=238.7\pm427.1$, $\bar{X}_{control}=537\pm888.9$, $p<0.05$) and total power ($\bar{X}_{DM}=1389\pm3251.3$, $\bar{X}_{control}=3038.6\pm6607.9$, $p<0.05$) in the patient group when compared with controls. A reduction in all other parameters was also observed. In time domain analysis, SDNN (standard deviation of all normal RR intervals recorded in a time interval) showed significant degree of lowering in diabetics when compared with controls ($\bar{X}_{DM}=30.7\pm21.6$, $\bar{X}_{control}=39.2\pm21.2$, $p<0.05$).

Conclusions: T2DM patients had a significantly higher incidence of CAN and significant reduction in short term HRV parameters compared to age matched healthy controls. Therefore, CAN testing and HRV analysis can be used in diabetics to detect autonomic dysfunction.

Keywords: *Cardiac autonomic neuropathy, Diabetes mellitus*

OP – 18

ASSESSMENT OF KNOWLEDGE ON FIRST AID MANAGEMENT OF A CHOKING CHILD AMONG PARENTS OF CHILDREN ADMITTED TO SIRIMAVO BANDARANAIKE SPECIALIZED CHILDREN'S HOSPITAL, PERADENIYA, SRI LANKA

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Introduction: Choking is a critical medical emergency caused by the obstruction of airways due to foreign objects. Timely and appropriate first aid is essential to prevent further complications and save the lives of choking victims, especially children. However, inadequate knowledge of first aid management in choking can lead to delayed or incorrect interventions, resulting in significant morbidity and mortality among children. Therefore, parents must possess a comprehensive understanding of recognizing choking symptoms and providing prompt and effective first aid.

Objectives: The study aimed to describe the level of knowledge and identify the sources of information regarding first aid management of choking among parents whose children were admitted to Sirimavo Bandaranayake Specialized Children Hospital.

Methods: A descriptive cross-sectional study was carried out using a simple consecutive sampling technique involving 425 parents. An interviewer-administered questionnaire was used to collect data and the collected data were analyzed using SPSS software. The knowledge was categorized as good or poor using a 50% cut-off value.

Results: The study found that only 38.8% of participants demonstrated good knowledge of choking first aid, with 3.3% scoring above 75%. Even though awareness of first aid for choking was high at 87.8%, only 18.8% had prior first aid training. Health professionals (53.1%), media (46.9%), and family (41.6%) were major knowledge sources.79.1% claimed to know what to do, but only 43.1% scored above 50% on the knowledge assessment. Specifically, 21.9% identified the universal choking sign, and 50.8% recognized complete airway obstruction symptoms. Only 10.4% knew correct first aid timing.

Conclusions: Parental knowledge regarding the first-aid management of choking is insufficient. Parents with prior first-aid training demonstrated better knowledge. Implementing parental education programs and comprehensive first aid training would enhance knowledge and skills in managing choking incidents and reducing childhood morbidity and mortality.

Keywords: *Choking, First aid, Knowledge, Parents*

OP – 19

NUTRITION-RELATED KNOWLEDGE, ATTITUDES, AND PRACTICES AMONG THE STUDENTS OF FACULTY OF ARTS, UNIVERSITY OF PERADENIYA

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Introduction: Having good nutrition-related knowledge and attitudes and applying them daily is crucial for a healthy life. As the young generation is the future of the country and their health affects productivity. Assessing and enhancing their nutrition knowledge, attitudes, and practices are important.

Objectives: To assess nutrition-related knowledge, attitudes, and practices among the students in the Faculty of Arts, University of Peradeniya, and to describe the association between nutrition-related knowledge, attitudes, and practices and gender, marital status, O/L science and health results, mother's education, mother's occupation, father's education and father's occupation.

Methodology: A descriptive cross-sectional study was conducted with 288 randomly selected students from all four-years of the faculty of Arts, University of Peradeniya. A self-administered online questionnaire was used to assess their nutrition-related knowledge, attitudes, and practices. Data analysis was done through statistical software package, SPSS, using Pearson correlation, the t-tests, and the ANOVA test. Respondents' levels of nutrition related knowledge, attitudes, and practices were categorised as 'poor' (<-1SD), 'average' (mean +/-1SD), or 'good' (>1SD)

Results: Out of a sample size of 288, 250 students completed the online questionnaire, with 80.8% being females and 19.2% males. Good knowledge, attitudes, and practices were observed in 18.8%, 13.2%, and 18.4% respectively. Significant correlations were found between knowledge and gender ($t = -2.794$, $p = 0.006$, t test), marital status, ($t = -3.04$, $p < 0.05$, t test) and O/L science results ($F = 3.415$, $p = 0.018$, ANOVA test). Attitudes showed a significant correlation with gender ($t = 2.333$, $p = 0.02$, t test), marital status ($t = -3.329$, $p = 0.001$, t tests), father's education level ($F = 2.427$, $p = 0.049$, ANOVA test), occupation ($F = 2.288$, $p = 0.027$, ANOVA test), and monthly income of the family ($F = 7.082$, $p < 0.05$, ANOVA test). Practices correlated significantly with age ($F = 2.450$, $p = 0.026$, ANOVA test) and marital status ($t = -3.337$, $p = 0.001$, t test). Knowledge and attitudes (Pearson correlation = 0.356, $p < 0.001$, Pearson correlation test), as well as attitudes and practices (Pearson correlation = 0.326, $p < 0.001$, Pearson correlation test), showed significant associations, but no correlation was found between knowledge and practices (Pearson correlation = 0.098, $p = 0.123$, Pearson Correlation test).

Conclusion: Since most of our study population exhibited average nutrition-related knowledge, attitudes, and practices, it is crucial to enhance their knowledge, attitudes, and practises up to a good level through relevant activities and programs. Improving knowledge will positively impact attitudes, leading to better nutrition practices and overall health maintenance.

Key words: *Attitudes, Nutrition-related knowledge, Practices*

OP – 20

KNOWLEDGE, ATTITUDES, PRACTICES AND ASSOCIATED FACTORS REGARDING COVID-19 AMONG THIRD- AND FOURTH-YEAR STUDENTS OF FACULTY OF MEDICINE, UNIVERSITY OF PERADENIYA

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Introduction: COVID-19 is a highly contagious respiratory infection caused by a virus, the Severe Acute Respiratory Syndrome Corona Virus 2 (SARS-CoV-2). The first case of COVID-19 was reported in Wuhan, China, in late 2019. Thereafter the disease spread worldwide affecting more than 180 countries, resulting in the COVID-19 pandemic which caused more than 600 million cases and over six million deaths.

Objectives: This descriptive cross-sectional study was conducted to identify knowledge, attitudes, practices (KAP) and associated factors regarding COVID 19 among third- and fourth-year students of Faculty of Medicine, University of Peradeniya.

Methods: Data were collected using a pre-tested adapted questionnaire sent as a Google Form to 422 medical students of three batches. Software package Jamovi version 2.3.2.1.0 was used in the analysis. Parametric tests: t test and ANOVA test were used to analyse continuous data with two categories and more than two categories respectively. ANOVA test results were further analysed using Games Howell post hoc test and correlation was calculated using Pearson's test.

Results: Calculated sample size was 0.678 of final concerned population (422/624). Majority of medical students had adequate knowledge (82.7%), positive attitudes (96.2%) and desirable practices (91.7%) while 90.5% had scored over 50% for complete questionnaire. Knowledge showed statistically significant associations with age ($p=0.023$) and year of study ($p=0.004$), attitudes were correlated with year of study ($p=0.014$) and source of information ($p=0.034$), while practices were associated with sex ($p=0.022$) and year of study ($p=0.002$). Total KAP score didn't show significant association with any of the factors. There were correlations between knowledge and attitudes, knowledge and practices and attitudes and practices ($p\leq0.001$ for each).

Conclusions: Knowledge-attitudes-practices regarding COVID-19 among third- and fourth-year medical students were satisfactory even with some aspects to be improved further.

Keywords: *COVID-19, Knowledge, Attitudes, Practices, Medical students*

OP – 21

THE PREVALENCE OF OBESITY AND OVERWEIGHT AND ITS RELATIONSHIP TO SEDENTARINESS AMONG OFFICE WORKERS WITHIN THE KANDY CITY LIMITS

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Introduction: Globally, technical advancement and mechanisation of work processes is the trend in work life and Sri Lanka is no exception. This, together with reduced physical activity and increased caloric intake has contributed to the increased prevalence of obesity among the employed population in Sri Lanka.

Objectives: To calculate the Body Mass Index (BMI) in office workers of 25 to 60 years of age from selected offices within the Kandy city limits and associate it with sedentariness.

Methods: A descriptive cross-sectional study was conducted on office workers during the month of November 2022. A self-administered questionnaire was distributed among office workers in selected offices within the Kandy city limits to gather information on anthropometric data, hours of sitting per day, hours of active work per day, hours of household work per day, diet, and frequency of exercise. BMI was calculated and categorised into normal, overweight, and obese. Sociodemographic data was analysed using descriptive statistics and chi-square analysis was carried out to determine the association between sedentary behaviours and obesity.

Results: The study population consisted of 164 (49.5%) males and 167 (50.5%) females. Of the total population, 65.3% had a BMI above 23 kg/m^2. A total of 43.5% were classified as overweight (35%) or obese (8.5%), Males were found to be significantly more associated with being overweight/ obese compared to females (Chi 18.9, df 1, $P < 0.01$). Most participants had sedentary behaviours including sitting for more than five hours (58.9%), using passive transport (84%), and doing less than three hours of household work (75.5%). Further, only 18.4% of the participants exercised for more than 150 minutes per week.

Conclusions: Overweight and obesity among office workers are associated with the sedentary lifestyle. Further, males were found to have a higher BMI than female workers.

Keywords: *Obesity, Office workers, Overweight, Sedentariness*

OP – 22

CLINICAL AUDIT TO IMPROVE PATIENT EXPERIENCE AT COVID-19 TREATMENT CENTRE IN DISTRICT BASE HOSPITAL TELDENIYA, SRI LANKA

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Introduction: Patient experience is the sum of all interactions, shaped by an organization's culture, that influence patient perceptions across the continuum of care. Better patient experiences are associated with better patient safety, improved clinical outcomes and higher patient satisfaction scores. Many complaints have been received from patients as well as from mass media on patients' dissatisfaction during their stay in COVID-19 treatment centres.

Objectives: To assess the effect of interventions done to improve patient experience at COVID-19 treatment centre in DBH Teldeniya.

Methods: A hospital-based clinical audit was carried out. All COVID-19 patients admitted to DBH Teldeniya from 1st September 2021 to 16th September 2021(n=46) were taken as the first sample and from 17th December 2021 to 29th December 2021 (n=46) were taken as a re-audit sample. Interviewer-administered questionnaire was conducted enabling patients to rate how happy they were with the healthcare on a 1-5 rating scale. The face and content validation of the questionnaire was obtained from the supervisor and consensual validation was obtained from an expert panel. Excel and SPSS software were used for data analysis.

Results: Positive patient experience rate was improved from 48.0% to 68.0% by providing results to health authorities who made decisions and implemented changes and interventions to improve the knowledge, attitudes, skills and practices of health staff. The changes and interventions were conducting training and motivation sessions and increasing the financial allocation for diet supply, staff incentives, sanitary facilities and basic amenities with the collaboration of provincial authorities.

Conclusions: Simple changes and proper interventions were very effective in improving the patient experience at the COVID-19 treatment centre in DBH Teldeniya. Recommend healthcare providers to sustain the clinical audits which is an ongoing process to improve patient experience.

Keywords: *Patient experience, COVID-19, Treatment*

OP – 23

AN OBSERVATIONAL STUDY TO IDENTIFY THE COLONIZATION RATE AND FACTORS ASSOCIATED WITH COLONIZATION WITH METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS* AMONG A SELECTED GROUP OF OLDER ADULTS

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Introduction: *Staphylococcus aureus* and its antibiotic-resistant phenotype, Methicillin Resistant *Staphylococcus aureus* (MRSA) cause a wide spectrum of infections. Older adults are known to be more severely affected by adverse outcomes due to MRSA infections.

Objectives: The study aimed to identify the MRSA colonization rates and associated factors among older adults > 65 years old with comorbidities attending clinic follow-up at Teaching Hospital, Peradeniya (THP).

Methods: Older adults aged > 65 years old, attending medical clinics at THP were recruited after obtaining informed, written consent. Self-obtained nasal swabs were collected, and an interviewer-administered questionnaire was used to get information on a predetermined set of associated factors including age, sex, ethnicity, hospitalization and surgical interventions within the past year, antibiotic use within the past three months, number of household occupants, number of children sharing the household, presence of pets or farm animals and presence of more than one comorbidity. Samples were cultured and routine microbiological investigations were done to identify *Staphylococcus aureus* strains. MRSA isolates were identified by cefoxitin sensitivity testing.

Results: A total of 309 participants; 152 (49.2%) were males and 93(30.1%) were ≥75 years old. *Staphylococcus aureus* was isolated from 36 (11.7%) and MRSA was isolated from 11 (3.6%) participants. None of the factors studied were significantly associated with colonization with *Staphylococcus aureus* while male gender was significantly associated with MRSA (p=0.028, Chi-square test) colonization.

Conclusions: Eleven point seven percentage of the study population colonized with Staphylococcus aureus while 3.6% colonized with MRSA. The male gender was associated with MRSA colonization. Further studies are warranted to study the prevalence of antibiotic-resistant bacteria and its potential impact on older adults.

Keywords: *AMR, Elderly, MRSA*

OP – 24

EXPRESSION OF VASCULAR ENDOTHELIAL GROWTH FACTOR A IN ORAL SQUAMOUS CELL CARCINOMA AND ORAL POTENTIALLY MALIGNANT DISORDERS

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Introduction: Vascular endothelial growth factor (VEGF), is a cytokine, which plays a key role in tumour growth by inducing angiogenesis, the process of forming new blood vessels to ensure adequate oxygen and nutrients. Among different subtypes of VEGF, VEGF-A has been described as a central regulator of angiogenesis. Oral squamous cell carcinoma (OSCC), the commonest cancer in Sri Lanka, often develops from oral potentially malignant disorders (OPMD). However, limited studies have been conducted to compare VEGF A expression in OSCC and OPMDs.

Objectives: This study aimed to determine the expression of serum VEGF A in OSCC and OPMDs, using enzyme-linked immunosorbent assay (ELISA).

Methods: A case-control study included histologically confirmed OSCC and OPMD patients, along with age- and sex- matched healthy individuals (25 participants per group, five females, 20 males). ELISA was performed using serum samples with 1:2 dilutions in duplicates. Standard curves were created by plotting known concentrations of a reference antigen against the mean readings obtained for each concentration. Unknown values were detected using the standard curves. Two sample t-test was used to compare the means of the groups.

Results: Mean serum VEGF A concentrations in pg/ml were 486.5±254.2 in OSCC, 375.5±240.7 in OPMD, and 135.23±44.91 in controls. VEGF A concentrations were significantly high in OSCC compared to controls (p=0.00). Similarly, OPMD patients also had significantly higher VEGF A concentrations than controls(p=0.00). No significant difference was observed between OSCC and OPMD patients (p=0.124).

Conclusions: The expression of VEGF A is high in the serum of both OSCC and OPMD patients compared to normal healthy individuals and is a potential biomarker for both OSCC and OPMDs.

Keywords: *Angiogenesis, Oral potentially malignant disorders, Oral squamous cell carcinoma, VEGF A*

OP – 25

LUNG FUNCTION OUTCOMES OF POST COVID INTERSTITIAL LUNG DISEASE (PCILD) – A TERTIARY CENTRE EXPERIENCE

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Introduction: Complications of COVID-19 infection has led to a substantial burden on healthcare systems around the world.

Objectives: To assess the lung function outcomes of PCILD two months after discharge.

To assess correlations between patient demographic factors, co – morbidities and lung function outcomes of PCILD patients.

Methods: A retrospective analysis of the lung function outcome of PCILD patients diagnosed between October 2020 to December 2021 at Teaching Hospital, Peradeniya was conducted. Data was collected from Bed head tickets, Diagnosis cards and Clinic records. Patient's demographic factors (age and sex) and co – morbidities(DM, HTN, IHD,BA)were noted. Outcome parameters assessed were Medical Research Council (MRC) dyspnoea score, basic spirometry with percentage predicted forced expiratory volume in first second (FEV1%), forced vital capacity (FVC%) and six-minute walking distance (6MWD) two months after discharge. Basic descriptive statistics along with Mann- Whitney U test and Spearman's rho test were used for the analysis.

Results: Among 249 COVID-19 pneumonia patients, 52 (27 females; mean age 56.25, range 32-87 years) were diagnosed with PCILD. We noted diabetes in 26(50%) (OR 1.345), hypertension 28 (53.8%) (OR 1.569), angina 9 (17.3%) (OR 1.51), and asthma 10 (19.25%) in the PCILD group. (We used COVID-19 pneumonia patients who did not develop PCILD as the comparison group to calculate OR). Mean CT score at diagnosis was 15.85/25 (range 4/25-25/25). At two-month follow up visit, mode MRC dyspnoea score was 1, mean FEV1% was 84.97 (SD 20.29), mean FVC% was 78.12 (SD 14.94), mean 6MWD was 295m (SD 89.58). Patient's age significantly affected FEV1% (Spearman's R=0.344, p=0.018) and 6MWD (Spearman's R=0.275, p=0.05) while presence of asthma lead to a reduction in FEV1% (68% vs. 89%, p=0.002)and FVC% (65% vs. 82%, p=0.001). In this group initial high CT score or presence of diabetes, hypertension or angina did not affect the two-month lung function test outcomes.

Conclusions: Patients with PCILD had a satisfactory outcome at two months. Advancing age and bronchial asthma were noted to adversely affect the clinical outcome.

OP – 26

KNOWLEDGE AND PRACTICES ON ANTIBIOTICS AND ANTIBIOTIC RESISTANCE AMONG G.C.E ADVANCED LEVEL BIOLOGY STREAM STUDENTS IN SELECTED SCHOOLS IN THE KANDY CITY

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Introduction: School children can be used as an effective method of communication in increasing public awareness regarding antibiotics and antibiotic resistance. Therefore, it is important to understand the current status of awareness and knowledge in this group.

Objectives: To describe the knowledge and practices on antibiotics and antibiotic resistance among Advanced Level Biology stream students in selected schools in Kandy City.

Methods: This study involved 196 Biology stream students from five Grade 1AB schools in Kandy City. A self-administered Google form-based questionnaire was used to collect data. A knowledge score was calculated and the association between the knowledge score categories and the independent variables was assessed using a chi-square test.

Results: The participants had a median age of 18.0 years (Inter quartile range:18-19) and the majority(129, 65.8%) were females. The knowledge scores ranged from 0 to 94.4 with a median of 61.1. Two-thirds (133, 67.8%) of the participants scored ≥ 50 marks. No significant association was identified in having a knowledge score of ≥ 50 with sex (p=0.66) or the presence of healthcare workers at home (p=0.905). Fifty-nine (30.1%) participants incorrectly identified paracetamol as an antibiotic while 93 (47.4%) identified the common cold as a disease that can be cured with antibiotics. Sixty-eight (34.7%) participants acknowledged accessing antibiotics without a prescription with 49/68 (72%) getting them directly from pharmacies. The majority (183, 93.4%) of the participants were willing to learn more even though 59 (30.1%) of the participants believed that students can't do much to prevent antimicrobial resistance.

Conclusions: Despite the good knowledge, concerning misbeliefs such as identifying paracetamol as an antibiotic and common cold as a disease to be treated with antibiotics were identified. The majority expressing willingness to learn is an opportunity to improve the situation.

Poster Presentation Abstracts

PP – 01

FACTORS LINKED WITH TREATMENT COMPLIANCE AMONG MENTALLY ILL PATIENTS IN NATIONAL HOSPITAL KANDY SRI LANKA

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Introduction: Non-compliance to treatment has been identified as a major factor in therapeutic failure in routine practices and scientific therapeutic trials and is directly related to poor prognosis. Furthermore, poor compliance to treatment leads to frequent relapses and repeated admissions and readmissions to mental health units of hospitals and subsequently leads to poor quality of life for both patients and family members.

Objectives: To determine factors linked with treatment compliance among mentally ill patients in National Hospital Kandy (NHK).

Methods: Hospital-based cross-sectional descriptive study was conducted at NHK using a systematic sampling technique. The study instruments used were an interviewer-administered questionnaire for patients, In-depth interviews for Consultant Psychiatrists and a Checklist for service availability. The sample size was 427 with inclusion criteria; diagnosed psychiatric patients with capability of responding, attended clinic for one year and aged more than 18y. Patients with high-risk behaviour were excluded. Study was conducted from October 2018 to October 2019.

Results: The vast majority of participants were Sinhalese (n=367, 85.9%), Buddhist (76.3%) and females (55.3%). The mean age was 50.2 years. Two groups studied were those compliant with treatment (n=307; 71.9%) and noncompliant with treatment (n=120; 28.1%). Determined factors linked with treatment compliance were living alone, poor family support, lack of insight, increased waiting time at pharmacy and clinic and social stigma. They were statistically significant at P value <0.05 were determined as associated with treatment compliance.

Conclusions: Recommend outreach programs to identify patients living alone and poor family support along with developing support networks and telehealth options, educational programs to improve patients' insight, a separate counter at pharmacy for psychiatric clinic to minimize waiting time at pharmacy, an appointment system to reduce waiting time at clinic, and strengthen multi-sectoral collaboration to reduce social stigma through media and community programmes by social workers.

Keywords: *Factors, Treatment compliance, Mental health, Non-compliance*

PP – 02

CLINICAL AUDIT TO IMPROVE PATIENT SATISFACTION AT COVID-19 TREATMENT CENTRE IN DIVISIONAL HOSPITAL LAGGALA, SRI LANKA

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Introduction: Patient satisfaction is the degree to which patients are content with their healthcare, both inside and outside the healthcare facility. Numerous complaints had been received from patients along with mass media reportings of patient dissatisfaction during their stays in COVID-19 treatment centres. Hence, this clinical audit helps to determine factors associated with patient satisfaction as well as to improve patient satisfaction led to advance the healthcare quality and patient safety.

Objectives: To improve patient satisfaction at COVID-19 Treatment Centre in Divisional Hospital (DH) Laggala.

Methods: A hospital-based clinical audit was carried out from 3rd September 2021 to 18th September 2021 involving all COVID-19 patients admitted to DH Laggala as the first sample and from 20th December 2021 to 2nd January 2022 (n=48) as the re-audit sample. A systematic random sampling method was carried out. An interviewer-administered questionnaire was used for data collection while Microsoft Excel and IBM SPSS statistical software were used for data analysis.

Results: The patient satisfaction rate had improved from 45.0% to 67.0% by providing results to relevant healthcare authorities who made decisions and executed changes and interventions to improve the knowledge, attitudes, and skills of health staff in addition to the provision of needy infrastructure directed to improve patient satisfaction.

Conclusions: Simple changes and proper interventions were very effective in quality and safety improvement. The overall patient satisfaction has been improved after a few interventions and changes at the COVID-19 treatment centre in DH Laggala.

Keywords: *COVID-19, Patient satisfaction, Quality, Safety, Treatment*

PP – 03

GLUCOSE UPTAKE BY MCF–7 CELLS UPON SUPPLEMENTATION OF CULTURE MEDIUM WITH FATTY ACIDS IN VIRGIN COCONUT OIL OR SOYA OIL

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Introduction: Diabetes mellitus is caused either by absolute insulin deficiency or impaired insulin action and characterized by hyperglycaemia. Its high prevalence worldwide and in Sri Lanka, call for novel measures to alleviate the condition. Earlier studies have shown an implication of coconut oil in regulating blood sugar levels.

Objectives: This study aimed to elucidate the effect of virgin coconut oil (VCO) or soya oil (SO) on glucose uptake in MCF – 7 cells in the presence and absence of insulin.

Methods: MCF – 7 cells were grown in 96 well cell culture plates using αMEM. Hydrolysates of VCO and SO (0.05, 0.1, 0.3, 0.5 µl per 100 µl of culture medium) were added to the wells along with sterile water as the control. All experiments were carried out in triplicate. The cells were allowed to grow for 4 days, and the residual glucose concentration in the media was measured using the glucose oxidase (GOD)-peroxidase-aminophenazone (PAP) method. The procedure was repeated with 4µl insulin per well. Finally, the above data were confirmed using 'glucose uptake colorimetric assay kit containing deoxyglucose'. In this procedure the deoxyglucose contents in the cells were measured according to the directions given by the manufacturer, under the above described experimental conditions.

Results: It was found that increasing the concentration of the hydrolysates of both oils to the extent of 0.3µl / 100 µl medium, increased the glucose uptake by the cells; however, increasing the amount of hydrolysate further reduced the glucose uptake. Similar results were seen both in the presence and absence of insulin.

Conclusion: These results confirm that the VCO and SO fatty acid supplementation of the medium in certain concentrations increased the glucose uptake by the MCF – 7 cells.

Keywords: *Diabetes, Glucose tolerance, Soya oil, Virgin coconut oil*

PP – 04

ENHANCING LEGISLATION ON IMPROVISED FIREARMS AND EXPLOSIVE USE IN SRI LANKA: SAFEGUARDING COMMUNITIES THROUGH EFFECTIVE MEASURES

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Introduction: Due to limited access to legalized weapons in Sri Lanka, individuals in farming communities tend to use improvised firearms and explosives for crop protection. Trap guns and modified firecrackers are such examples. Haphazard use of such weapons often lead to accidental injuries, mostly in rural areas. According to the Firearms Ordinance, using such devices is only punishable by a fine of 100 rupees on the first instance. Further, there is a gap in knowledge in the general public regarding the law as well.

Case Presentation 1: A 55-year-old man who walked into the forest to pick vegetables accidentally triggered a trap gun. It caused a fracture in the distal femoral condyle and tibial plateau on the right side.

Case Presentation 2: A 37-year-old farmer, while walking along his paddy field to retrieve equipment, accidentally triggered a trap gun. It caused a compound fracture on the right tibial plateau and fibular head and a tibial fracture on the left side. X-ray of the affected site showed multiple cylindrical roller bearings which were used as pellets in the trap gun.

Case Presentation 3: A 50-year-old farmer was injured by a trap gun while walking through the woods. His left popliteal artery was lacerated, resulting in impaired distal circulation and subsequent above-knee amputation.

Case Presentation 4: A 31-year-old male attempted to use two triangular bomb fireworks (*thun hulas*) together to drive away birds in his farm, which accidentally exploded on his dominant hand. As a result of the blast, his right hand was grossly mutilated leading to the surgical amputation of the hand.

Conclusion: Using improvised explosives and firearms can lead to various injuries, ranging from grievous injury to death. Therefore, it is crucial to update the laws to regulate their possession and usage and also to educate the affected communities.

Keywords: *Explosive agents, Farmers, Firearms, Surgical amputation, Trap gun*

PP – 05

ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) FINDINGS ON ANATOMICAL VARIATIONS OF THE INTRAHEPATIC BILIARY TRACT AND ASSOCIATED PATHOLOGIES IN A SRI LANKAN COHORT: A SINGLE CENTRE STUDY

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Introduction: The biliary tract comprises a duct system that drains the liver. Accurate knowledge regarding the variations in the pattern of these ducts are important during radiological procedures and treatment of conditions in this region. Endoscopic retrograde cholangiopancreatography (ERCP) is a widely used radiological technique for diagnosis and therapeutic interventions within the biliary tract.

Objective: To classify the anatomical variations in the biliary tract using ERCP images based on the Huang classification and to record the common biliary pathologies in each variant.

Methods: This study was conducted at Faculty of Medicine and Teaching hospital Peradeniya, Sri Lanka. Forty-nine ERCP images conducted for diagnostic purposes, from October 2022 to February 2023 were retrieved from the image library and were interpreted by a consultant radiologist and an anatomist.

Results: The age range of patients was from 23 – 81 years, with most of them being females (71.4%). From the 49 images obtained, 40 (81.6%) images were of good quality, 2 had poor quality, while 7 did not show the right side of the duct system. Therefore the 40 good quality images were used for interpretation. Huang Type A1 pattern was observed in 27 patients (67.5%), Type A2 was seen in 11 (27.5%) and Type 3 and 4 were observed in each of the other two cases. Commonest pathologies associated with Type A1 were dilatation of common bile duct (19 cases) and related common bile duct stones (11 cases), and dilated common bile duct with Type A2 (7 cases).

Conclusion: The pattern of biliary tract confluences in this Sri Lankan sample is similar to reported data with Huang Type A1 being the typical variant, followed by Type A2, with Type 3 and 4 variants being uncommon. The most associated pathology with the commonest variants was common bile duct dilatation.

Keywords: *Biliary tract, Biliary pathology, Endoscopic retrograde cholangiopancreatography, Sri Lanka, Variations*

PeMSARC'23

PERADENIYA MEDICAL SCHOOL ANNUAL RESEARCH CONFERENCE