Proceedings of

5th Research Symposium - Faculty of Allied Health Sciences

University of Ruhuna

"Research During the Online Era"

August 26, 2022

Faculty of Allied Health Sciences, University of Ruhuna
Galle, Sri Lanka

RuFARS-2022

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Foreword

The 5th Research Symposium (RuFARS-2022) was organized by the Faculty of Allied Health Sciences, University of Ruhuna, Sri Lanka. The abstracts and the full paper arisen from diverse disciplines of Allied Health Sciences have been peer reviewed prior to acceptance. The abstracts and the full paper have been edited to maintain language accuracy and page limits. Responsibilities of the content of the abstracts and the full paper included in this proceeding book remain with the respective authors. No part of this serial publication will be reported in any form.

When citing the abstracts and full paper published, the serial publication is to be referred to as 'Proceedings of the 5th Research Symposium, Faculty of Allied Health Sciences, 2022, University of Ruhuna'.

Editorial Board
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Message from the Keynote Speaker

COVID-19 pandemic has changed almost everything related to human behaviours. Despite being neglected in Sri Lanka due to other more pressing issues, the pandemic has not been over yet for Sri Lanka and the global community.

Education, science and research sectors have experienced an extremely challenging period due to many inter-connected factors. Resources even in resource-poor settings were directed to COVID-19 pandemic control and prevention, and any available research funds were given for pandemic-related research. Higher education suffered heavily and online education was promoted as the only option.

Even though there are limitations, the scientific method and the rigour of the research approach should not be affected by any pandemic. Observing, analysing, and investigating the clinical problems that we are dealing routinely require more attention than ever to overcome the problems due to the COVID-19 pandemic.

Undertaking the challenge of organising a research symposium during this period is not an easy task. I extend my sincere congratulations to the Dean and organising committee of the 5th Research Symposium of the Faculty of Allied Health Sciences, University of Ruhuna for taking up this challenge. I am eager to see the work related to the symposium theme "Research during the online era", which will be useful for many more months to come until we see the end of this pandemic.

Senior Professor Suneth Agampodi
Chair Professor
Department of Community Medicine
Faculty of Medicine and Allied Sciences
Rajarata University of Sri Lanka

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Message from the Vice Chancellor and the Chief Guest

It is with great pleasure, I am sending this message to the 5th Research Symposium at the Faculty of Allied Health Sciences, University of Ruhuna (RuFARS-2022). I am glad to witness the progress of the Faculty of Allied Health Science, as the youngest faculty in the University of Ruhuna, in seeking excellence and creating new knowledge.

This multidisciplinary event covers all fields of Health Sciences including Nursing and Midwifery, Public health and Health promotions, Medical Laboratory Sciences and Pharmacy and Pharmaceutical sciences etc. Hence, it gives more opportunities for professionals in the health care sector to interact with each other sharing their experiences and promote collaborations and team work.

The theme of the RuFARS-2022 symposium is "Research during the online era". COVID-19 created opportunities for countries apart from challenges. It created a digital era overnight for the entire community which was reluctant to accept the change for decades. This online era has facilitated us to engage in research by providing quick access to information, wide geographical scope, a larger sample size leading to greater statistical power, reduced cost of conducting empirical research, support from online search engines and databases and open data sources. By taking the maximum benefit from the digital era, researchers and scholars are able to conduct research and share their new knowledge and receive peer feedback and comments. The access to intellectuals worldwide to receive advice and feedback is unimaginable.

The COVID-19 pandemic is gradually declining but, in the aftermath, many countries including Sri Lanka are facing economic crises. All over the world, health systems are facing a negative impact in finding funds for management of health services. Access to health services have become a big issue now. I invite all the participants to use RuFARS platform as an opportunity and initiate a dialogue to address these emerging issues.

I would like to pay my gratitude for the diligent effort of the Dean of the Faculty of Allied Health Sciences, Chairperson and organizing committee of RuFARS-2022 for conducting this research symposium for the fifth consecutive year by overcoming challenges in the country due to the prevailing economic crisis.

I extend my wholehearted best wishes for a successful symposium and look forward to witness for exciting and informative scientific sessions.

Senior Professor Sujeewa Amarasena
Vice Chancellor
University of Ruhuna

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Message from the Dean, Faculty of Allied Health Sciences

It is an honour and a privilege for me to write this message to the 5th Ruhuna University Allied Health Sciences Research Symposium (RuFARS-2022) as the Dean.

The Faculty of Allied Health Sciences was established in September 2017 becoming the 10th Faculty of University of Ruhuna, to expand the opportunities for higher education in the field of allied health sciences as well as to improve the quality of training of health care workers of the country. Aim of the Faculty is to prepare competent, caring, compassionate and reflective allied health graduates skilled in the delivery of patient care in collaboration with other healthcare professionals and capable of becoming potential care giving leaders, educators and researchers. At present, there are three departments in the faculty; Medical Laboratory Science, Nursing and Pharmacy. Faculty intends to commence several new undergraduate degree programmes relevant to health sciences by the year 2023 in the fields of occupational therapy, public health science and orthotics and prosthetics. Further, Department of Nursing has initiated activities for the establishment of a postgraduate degree programme in neurodegenerative care.

Since 2018, Faculty was able to conduct the RuFARS consecutively even amidst COVID outbreak in 2021. One of the aims of the RuFARS is to showcase the new findings of academic members and undergraduates of the faculty to the public. Over the past few years, undergraduate research work has immensely contributed to strengthen the research culture. Majority of the publications in the proceedings of the 4th RuFARS has showcased the research potential of the undergraduates. This year we are holding the RuFARS for the 5th consecutive time with 54 research presentations. We made every attempt to hold this annual event, despite current political and financial turmoil in the country. It is unfortunate that we all cannot meet physically and share our knowledge for the improvement of research activities. I wish the contribution from the keynote speaker, Senior Professor Suneth Agampodi, Chair and the Founding Professor of the Department of Community Medicine, Rajarata University of Sri Lanka would enrich the research culture of our faculty, scientific community of other universities and health science professionals who actively take part in this event.

Finally, I convey my sincere gratitude to the Vice Chancellor of the University of Ruhuna for his unceasing moral support to organize this event and it is with great appreciation I thank the Chairperson of RuFARS-2022, Dr. Harshini Peiris and the organizing committee for their commitment to make RuFARS-2022 a reality while doing routine duties and responsibilities as academics during this difficult time. I take this opportunity to appreciate and congratulate all the presenters for sharing their research findings with academic community of our country.

I wish all of you have valuable and memorable experience with RuFARS-2022.

Professor Imendra Kotapola
Dean/ Faculty of Allied Health Sciences
University of Ruhuna

Message from the Chairperson RuFARS-2022

As the chairperson of the organizing committee, it is a great pleasure to bring this message to the 5th Ruhuna Faculty of Allied Health Sciences Research Symposium; RuFARS-2022, Faculty of Allied Health Sciences, University of Ruhuna.

The Faculty of Allied Health Sciences at University of Ruhuna produces knowledgeable and skillful healthcare professionals aligned with sustainable goals in the healthcare field. RuFARS has been conducted successfully in every year since 2018, as a calendar event of the faculty. This annual event significantly contributes developing practices in the healthcare system of our country.

Even during this critical period, research studies are done with the dedication of researchers and their eagerness to apply the knowledge for innovations and creations. At present, many activities are moving to online platforms as a solution for the present crisis. RuFARS-2022 conference has been structured to address those challenges head-on. Therefore, RuFARS-2022 is conducted under the theme of "Research During the Online Era" and hosted by the Department of Medical Laboratory Science as a virtual conference. This symposium offers an opportunity for all the delegates in the health sector to share knowledge on innovations and creations to uplift health services. It makes a platform to share philosophies to overcome the obstacles during the online era while doing fruitful research studies.

RuFARS-2022 has been fortunate to receive 53 abstracts even during this economic crisis in the country and as the chairperson I thank you, the presenters, for enriching this symposium by your presence. As is a tradition with symposia, I hope you will enjoy the content, renew old fellowships, make new fellowships, get new ideas, and above all, have a great deliberation. As the symposium chair, I know that, the success of the symposium depends on many who worked with us in planning and organizing the event. I wish to express my sincere gratitude for the great support and guidance given by the Vice Chancellor, Senior Professor Sujeewa Amarasena and Dean of the Faculty, Professor Imendra Kotapola, who have a very clear desire to upgrade the standards of research and health care professionals in the country. I extend my heartfelt gratitude and appreciation to Senior Professor Suneth Agampodi, Dean and Professor of Community Medicine, Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka for accepting our invitation to be the keynote speaker. The hard work and dedication rendered by all the members of editorial board, scientific, registration, inauguration, financial, food, web, logistic and media committees during the preparation for this symposium is highly appreciated. Without them the event would not have been possible. A note of appreciation to all the reviewers for their comprehensive and timely reviewing of the papers.

I hope RuFARS-2022 a great success and wish all the presenters and participants a fruitful symposium.

Dr. (Mrs.) Harshini Peiris
Chairperson, RuFARS-2022

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**Full Papers on Postgraduate Studies Completed by the
Academic Staff Members of the
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FP 01

Factors Associated with Activities of Daily Living among Stroke Survivors Attending Follow-up Clinics at Teaching Hospital, Karapitiya

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Abstract

Background: Stroke is a leading cause of adult disability in the world. It can affect the activities of daily living (ADL) of stroke survivors. Identifying the factors associated with ADL of stroke survivors is vital to provide proper rehabilitation and to improve the quality of life.

Objectives: To determine the level of dependence on ADL and the factors associated with ADL of stroke survivors.

Methods: A descriptive cross-sectional study was conducted with the participation of 257 stroke survivors attending follow-up neurology and medical clinics after three months of hospital discharge at Teaching Hospital Karapitiya. Convenient sampling technique was used and every consecutive patient who fulfilled the inclusion criteria was invited to participate in the study. Barthel index (BI) was used to assess the ADL and a self-developed interviewer-administered questionnaire was used to assess the socio-demographic and clinical parameters.

Results: The mean (SD) age of the participants was 66.12 ($\pm$11.6) years and 58.8% were males. Among the participants, 80.9% had ischemic strokes. The mean (SD) BI score three months after discharge was 64.7 ($\pm$26.4). Of the participants, 40.8% were severely dependent on the ADL. The level of dependence was negatively correlated with age (r=-0.13, p<0.05). Age, marital status, occupation, type of stroke, level of disability at the time of hospital discharge, receiving rehabilitation, and follow-up care were significantly associated with ADL (p<0.05). Significant predictors of ADL were level of disability, duration of hospitalization, and regularity of follow-up care treatment (p<0.05).

Conclusions: Young age, married, doing a formal occupation, longer hospital stay, receiving continued rehabilitation therapies, and regular follow-up care had better independence on ADL. Therefore, it is vital to plan appropriate rehabilitation interventions to improve ADL.

Keywords: Activities of daily living, Disability, Rehabilitation, Stroke

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Introduction

Stroke has been ranked as the second-leading cause of death and the third leading cause of disability in the world (1). The percentage of disability-adjusted life years (DALYs) due to stroke is higher in low and middle-income countries compared to high-income countries (2). In Sri Lanka, stroke is considered as the leading cause of adult disability while the incidence of stroke is predicted to increase with the epidemiological transition (3). Age is one of the most vital non-modifiable risk factors for stroke. Therefore, the prevalence of stroke will be increased with increasing the proportion of older population in the country (4). In Sri Lanka, there is a decline in stroke mortality which has moved from the 5th to the 6th leading cause of in-hospital deaths. However, the number of survivors remaining with disabilities are in an upward trend (4).

Stroke can cause different types of consequences including paresis, motor impairments, memory, cognitive, language and sensory impairments (5). These disabilities can interfere with the activities of daily living (ADL) which affect the overall well-being of a person (6). ADL are the day-to-day activities that a person carried out including self-care activities such as feeding, grooming, bathing, using the toilet, etc. When the patients are unable to carry out self-care activities of daily living, their quality of life can be affected. Moreover, dependence on ADL on others can be a burden to their family as well as the society. According to a previous study conducted in Australia, around 75% of stroke survivors suffer from difficulties to carry out ADL (7). Previous studies demonstrated that there is a significant association between ADL and the quality of life in patients with stroke (8,9). Reduced physical function due to stroke is also associated with depression (10). Therefore, identifying the factors associated with ADL among patients with stroke will be important to provide proper rehabilitation as well as to improve the quality of life.

Several factors can affect the ability to carry out ADL among patients with stroke. According to Pei et al, clinical factors such as the frequency of stroke, type of stroke, nutritional status, and socio-demographic factors such as financial status, and age had a significant effect on the ADL (11). The ADL was decreased when the patient has severe physical disabilities and it is considered a factor that can affect the reintegration to normal life after stroke (12).

Patients with disabilities should receive proper rehabilitation and follow-up care, especially in the community. In the current Sri Lankan setting the facilities and resources for community-based rehabilitation are minimally developed. To the best of our knowledge, no studies have been conducted to assess the activities of daily living and associated factors among stroke survivors in the Sri Lankan context. Therefore, this study was conducted to identify the factors associated with ADL among stroke survivors.

Methods and materials

Study design and sampling
A descriptive cross-sectional study was conducted among community-dwelling stroke survivors who were attending follow-up clinics at Teaching Hospital Karapitiya. Convenient sampling technique was used to collect data. Every consecutive patient admitted to the hospital due to a stroke was invited to participate in the study, if they fulfilled the inclusion criteria (n=289). Patients aged 30-80 years were recruited for the study. Those aged >80 years, patients with other neurological disorders, major psychiatric disorders, and those with disabilities before the onset of stroke were excluded from the study (n=79). The level of dependence and disability were assessed at the time of hospital discharge of 289 patients. Out of 289 patients, 257 patients were followed up after 3 months during their follow up visits at neurology and medical clinics.

Ethical approval for the study was obtained from the Ethics Review Committee, Faculty of Medicine University of Ruhuna (ref.num-26.05.2015:3.15), and written informed consent was obtained from the patient or next of kin of the patient.

Study instruments

Socio-demographic characteristics (gender, age, occupation, level of education, income, marital status) and clinical parameters (type of stroke, presence of NCDs, duration of hospitalization), rehabilitation, and details regarding follow up care (receiving physiotherapy, Ayurveda treatment, frequency of follow up care, etc.), and support received from the family members were assessed using an interviewer administered questionnaire and records of the patients.

The validated Sinhala version of the BI was used to assess the level of dependence on ADL (13). There are items related to two main categories as self-care and mobility. To assess self-care activities six subscales were used including feeding, grooming, bathing, dressing, bowel and bladder care, and toilet use. The mobility of the patients was assessed using subscales including ambulation, transfers, and stair climbing. The total score of BI varies between 0-100 with 0 indicating the worst dependence on ADL and 100 representing the complete independent state on ADL. Patients were further categorized as totally dependent (score between 0-20), severely dependent (score between 21-60), moderately dependent (score between 61-90), and slightly dependent (score between 91-99). The Modified Ranking Scale (MRS) was used to assess the level of disability among patients at the time of hospital discharge. Data collection was done by the principal investigator who has prior experience in working with stroke survivors.

Data analysis

Data were analysed using the Statistical Package of Social Sciences (SPSS) version 20. Kolmogorov-Smirnov test was used to assess the normality of data. Descriptive statistics, Pearson correlation, one-way ANOVA and independent sample t-test were used to determine the association of those factors with the BI score to determine the associations. The variables which are significantly associated ($p<0.05$) were further analysed using multiple linear regression analysis. The weak correlations were excluded by applying a stepwise manner to identify the independent predictors of the level of dependence of patients with stroke. The $p<0.05$ was considered statistically significant.

Results

Socio-demographic and clinical parameters of the patients

The mean age (SD) of the participants was 66.12 (±11.6) years and 58.8% were males. Of all patients, 39.7% had obtained primary education and the majority of the patients (75.9%) were married. The majority (80.9%) were admitted to the hospital to due ischemic strokes, while 19.1% were admitted with haemorrhagic strokes. Out of the study sample, 36.2% stayed in the hospital for less than three days. The most prevalent comorbid NCD was hypertension (65.0%) followed by diabetes mellitus (31.1%) and dyslipidaemia (36.2%).

The participation in rehabilitation including physiotherapy, speech therapy, and occupational therapy was 51.8%, 14.0%, and 4.7%, respectively. Out of all the patients, 50.2% mentioned that they received Ayurvedic treatment.

Most of the patients (75.9%) were satisfied with the support they received from the family members. Of all patients with stroke, (66.5%) regularly participated for follow-up care. Rehabilitation and follow up care of the patients with stroke are shown in Table 1.

Table 1: Rehabilitation therapies and follow-up care of the stroke survivors (n=257)

Factor	Category	n	%
Rehabilitation (physiotherapy)	Received	133	51.8
	Not received	124	48.2
Rehabilitation (occupational therapy)	Received	12	4.7
	Not received	245	95.3
Ayurvedic treatment	Received	129	50.2
	Not received	128	49.8
Follow up clinic visits	Continue regularly	171	66.5
	Not regular	86	33.5
Support from family members	Very satisfied	58	22.6
	Satisfied	195	75.9
	Not satisfied	4	1.6

The level of dependence on ADL

The mean (SD) BI score at the time of hospital discharge [52.24 (±26.7)] was significantly lower than the BI score at the time of follow-up after three months [64.7 (±26.4)]. The level of dependence on ADL according to the BI score is shown in Table 2.

Table 2: Level of dependence of the stroke survivors (n=257)

Level of dependence	At the time of hospital discharge		Follow up (after three months)	
Level of dependence (BI score out of 100)	n	%	n	%
Totally dependent (0-20)	34	16.7	24	9.3
Severely dependent (21-60)	109	42.4	81	31.5
Moderately dependent (61-90)	94	36.6	112	43.6
Slightly dependent (91-99)	8	3.1	7	2.7
Complete physical independent (100)	3	1.2	33	12.8

Factors associated with the level of dependence on ADL

The level of dependence which was assessed using the BI score was negatively correlated with the age (r=-0.13, $p<0.05$). The level of dependence was significantly associated with marital status, employment status, type of stroke, duration of hospitalization, level of disability, receiving physiotherapy and follow-up care. The associations are shown in Table 3.

Those who were married obtained higher mean scores for the BI (67.6±25.3) than unmarried/widowed participants [$F(2, 254)=5.3$, $p<0.05$]. The level of dependence was significantly different based on the employment status ($p<0.05$). Those who did not have a job/housewives obtained significantly lower scores for the BI than others.

Patients with ischemic strokes had a significantly better level of dependence (67.1±25) than patients with haemorrhagic strokes (54.8±29) at $t(255)=2.98$, $p<0.01$. Further, patients with

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no/slight disability at the time of discharge obtained higher scores for the BI than those who had moderate/ severe disability levels [$F(2, 254)=155.9$, $p<0.01$].

Moreover, those who spent more days (more than five days) in the hospital obtained significantly lower ($p<0.05$) BI scores (56.1±32) than others. Those who received physiotherapy obtained significantly lower BI scores (60.9±25) than those who did not receive physiotherapy (68.9±26), $p<0.05$. The level of dependence was significantly lower for those who received Ayurvedic treatment (59.8±25), $p<0.05$ than for those who did not receive (70.3±26), $p<0.05$. Further, the level of dependence was significantly different based on the regularity of follow-up care. Those who participated in regular follow-up care (67.9±25) had a higher level of dependence than those who did not attend follow-up care regularly (58.3±24), ($p<0.05$). Gender, level of education, monthly income, presence of other non-communicable diseases, level of satisfaction with family support, and distance to the hospital was not significantly associated with ADL after three months of discharge ($p>0.05$).

Table 3: Factors Associated with the Activities of daily living of stroke survivors (n=257)

Factor		Mean (SD)	*p*-value
Marital status	Married (n=195)	67.6 (25.3)	0.006**
	Unmarried (n=26)	59 (29.4)	
	Widowed/separated (n=36)	53.3 (27.2)	
Employment	Involve in any occupation (n=85)	63.7 (26.3)	0.036*
	Business (n=41)	75.5 (18.6)	
	Retired (n=54)	63.3 (27)	
	No job/housewife (n=77)	61.2 (28.7)	
Type of stroke	Ischemic (n=208)	67.1 (25)	0.003**
	Haemorrhagic (n=49)	54.8 (29.9)	
	Not received (n=247)	64 (26.6)	
Duration of hospital stay	< 3 days (n=93)	72.7 (23.7)	0.001**
	3-5 days (n=110)	62.2 (23.9)	
	> 5 days (n=54)	56.1 (31.7)	
Level of disability	No/slight disability (n=53)	92.9 (9.5)	0.001**
	Moderate disability (n=58)	81.1 (8.6)	
	Severe disability (n=146)	48 (22.1)	
Rehabilitation (physiotherapy)	Received (n=133)	60.9 (25.8)	0.003**
	Not received (n=124)	68.9 (26.5)	
Ayurvedic treatment	Received (n=129)	59.8 (25.4)	0.001**
	Not received (n=128)	70.2 (26.1)	
Follow-up	Regular (n=171)	68 (25)	0.005**
	Not regular (n=86)	58.3 (24.2)	

* Statistically significant at the level of *p*<0.05
SD- Standard Deviation

Independent predictors of the post stroke level of dependence
The associated variables were further analysed using regression analysis to identify the independent predictors. The results of multiple linear regression showed that the model explained 56% of the variance ($R^2=0.56$). The significant predictors of the level of dependence

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in patients with stroke were level of disability at the time of discharge, duration of hospitalization, regularity of follow up care treatment, [$F(3, 253)=107.1$, $p<0.05$]. Patients with no/slight disability, shorter hospital stay and regular follow-up care had better BI scores than other patients.

Discussion

The main aim of the current study was to identify the level of dependence on ADL and to determine the factors associated with ADL among patients with stroke. As we expected the ability to perform ADL had improved after 3 months of hospital discharge as measured by the BI. The mean BI score was 52.2 at the time of hospital discharge and this finding is in line with a previous study which was conducted in China, where the mean BI score was 50.5 (11). The level of dependence was significantly associated with socio-demographic factors as age, marital status, and employment status. Moreover, the level of dependence was significantly different based on clinical parameters such as type of stroke, duration of hospitalization, level of disability, receiving physiotherapy, and follow-up care. Out of these factors, the level of disability at the time of discharge, duration of hospitalization, and regularity of follow-up care treatment were the independent predictors of the level of dependence on ADL among patients with stroke in our study.

According to Pei et al, socio-demographic factors such as financial status, and age had a significant effect on ADL which is comparatively similar to the current study findings (11). Older age the decline ADL, and further, when the patients have a comparatively better financial status it is easier to access the health care facilities and to follow up the treatment regimen effectively. Although in the present study gender is not significantly associated with ADL, previous literature showed that women had a greater degree of dependence than men (14). Those who are married obtained significantly higher scores for ADL which is in line with a previous study (15). This may be due to the effective role of the family caregivers who take care of their family members and help to recover from the disability. Receiving physiotherapy and rehabilitation is associated with ADL in a previous study (16). These results are comparatively similar to our study findings as in the current study the regularity of follow-up care and receiving rehabilitation are associated with ADL. Further, the cognitive impairment which was measured using MMSE showed a significant association with the level of dependence (17). The current study did not assess the level of cognition and the association with ADL. Therefore, it is not possible to conclude whether cognitive impairment inhibits the recovery process and affects ADL.

The current study was conducted with the participation of 257 stroke survivors and after three months of discharge from the hospital, their level of dependence was measured. The large sample size to represent the patients with stroke is a strength of the study. Further, this study was carried out in Teaching Hospital, Karapitiya which is the major tertiary care hospital in the Southern province of Sri Lanka. Therefore, patients from a vast area of the Southern province attend the clinics. As limitations, the level of cognition and psychological status of the patients were not assessed in the current study. Therefore, the impact of the above-mentioned limitations on the level of dependence cannot be determined based on the current study findings.

The findings of the current study will be important for the health care workers, formal and informal caregivers, and policymakers to arrange proper rehabilitation treatment regimens for patients with stroke. The associated factors with ADL can be taken into account when caring the patients. Further, nursing interventions can be planned to improve the ADL of stroke survivors in future studies.

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Conclusions

Activities of Daily Living of stroke survivors has significantly improved after three months when compared to the level of dependence at the time of discharge. However, a significant percentage of stroke survivors are dependent on ADL. Patients with young age, married, and with proper financial income and proper follow-up care had better level of independence on ADL scores. Patients with a higher level of disability at the time of discharge and long hospital stay had lower BI scores indicating a higher level of dependence. Therefore, it is vital to plan timely rehabilitation interventions to improve ADLs.

Acknowledgement

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Oral Presentations

OP 01

Correlation of eGFRs Estimated by Different Equations based on Creatinine and Cystatin C in Patients on Haemodialysis Treatment

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Background: Chronic kidney disease (CKD) is an emerging global health burden. Precise assessment of the estimated glomerular filtration rate (eGFR) is crucial for the accurate staging of CKD. Different equations have been formulated based on both creatinine and cystatin C values.

Objectives: To correlate eGFR estimated by different equations of creatinine and cystatin in CKD patients on haemodialysis treatment.

Methods: Serum concentrations of creatinine, cystatin C and blood urea nitrogen were measured on 40 pre-dialysis samples received at the chemical pathology laboratory at Teaching Hospital, Karapitiya. eGFR values were calculated using creatinine-based Modification of Diet in Renal Disease (MDRD) and three of Chronic Kidney Disease Epidemiology (CKD-EPI) equations based on creatinine and/or cystatin C values (CKD-EPI$_{Cr}$, CKD-EPI$_{Cys C}$ and CKD-EPI$_{Cr-Cys}$). Data were analysed using an independent sample t-test, Pearson's correlation and Bland Altman method using SPSS version 25.0.

Results: Of the participants (n=40), 55% were males. The mean (SD) age of study subjects was 49.6 ($\pm$13.9) years. The majority (52.5%) were within the age group 39-59 years. Mean serum concentrations of creatinine, cystatin and blood urea nitrogen of males were 10.39 ($\pm$4.51) mg/dL, 6.63 ($\pm$1.33) mg/L, 50.37 ($\pm$18.3) mg/dL respectively while of females were 8.59 ($\pm$3.26) mg/dL, 6.10 ($\pm$1.31) mg/L, 40.89 ($\pm$16.06) mg/dL respectively. No significant differences in renal function parameters and eGFR values were observed gender-wise or in different age groups (p>0.05). Bland Altman plots revealed certain level of agreement between all selected equations, except for the values derived from CKD-EPI equations based on cystatin C alone and creatinine-cystatin C combination (p=0.022). Person's correlation analysis revealed significant positive correlations between all selected equations of eGFR. The highest correlation was observed between MDRD and CKD-EPI equations based on creatinine values (r=0.998, p<0.001) whereas the lowest correlation was observed between MDRD and CKD-EPI equation based on cystatin C alone (r=0.552, p<0.001).

Conclusions: The present findings suggest, creatinine-based MDRD and CKD-EPI equations in the routine clinical setting to support the management of CKD patients on haemodialysis treatments. The combined equation rather than the CKD-EPI equation based on cystatin C alone, as a confirmatory tool where necessary.

Keywords: *Chronic Kidney Disease, Creatinine, Cystatin C, eGFR equations, Haemodialysis*

OP 02

Gait in Post-Stroke Hemiplegic Patients is influenced by Upper Limb Functioning: A Quantitative Analysis Correlating QuickDASH with 4m Walk Test

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Background: Stroke is a leading cause of adult disability and death. Stroke can affect the motor cortex of patient resulting hemiplegia. Post stroke hemiplegic patients may suffer from impairments in gait and impairments in upper limb functionality. As survival rate of stroke among old population increases, it is important to identify the residual physical impairments to design effective rehabilitation programme.

Objectives: To determine the relationship between degree of functionality of the affected upper limb and speed, stride length and cadence of gait in post-stroke hemiplegic patients attending Neurology Physiotherapy Unit at National Hospital of Sri Lanka.

Methods: A descriptive cross-sectional study was conducted recruiting 45 males and 35 females by convenient sampling method. The short version of disabilities of the arm, shoulder and hand questionnaire (QuickDASH) was used to assess the functionality of the affected upper limb. The range of the score is from 0-100. Zero indicates no significant disability and 100 indicates a most severe disability. A video was made while the subject was performing 4m Walk Test (4mWT). The comfortable speed, maximum speed, stride length-affected side and cadence were calculated by analyzing the video using Kinovea software version 0.8.15. Data were analyzed by descriptive statistics, independent sample t-test and Pearson correlation test in SPSS version 20.0.

Results: The mean age of the participants was 60.78 years. The mean (SD) of comfortable speed, maximum speed, stride length-affected side, cadence of gait and the QuickDASH score of the sample were 0.36 ($\pm$0.23) ms^{-1}, 0.49 ($\pm$0.31) ms^{-1}, 55.38 ($\pm$36.13) m, 69.55 ($\pm$23.58) min^{-1} and 39.34 ($\pm$20.83), respectively. The comfortable speed ($p<0.001$), maximum speed ($p<0.001$) and cadence ($p=0.001$) decrease with the increase of QuickDASH score of the subject. There was no statistically significant relationship between stride length-affected side ($p=0.315$) and QuickDASH score. QuickDASH score and 4mWT, moderate correlations were found for: comfortable speed, maximum speed, and cadence.

Conclusions: With the decrease of upper limb functionality, efficacy of gait was affected in a post-stroke hemiplegic patient. Hence, during the rehabilitation of post-stroke hemiplegic patients, it is recommended to engage the patient early in upper limb exercises to improve functionality, which will in turn help to improve speed and cadence of walking.

Keywords: 4m walk test, Gait, QuickDASH, Stroke, Upper limb functionality

OP 03

Is Neutrophil-Gelatinase associated Lipocalin a Sensitive Indicator of Paediatric Renal Health over Albuminuria in Communities with High Burden of Chronic Kidney Disease of Uncertain Aetiology in Sri Lanka?

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Background: Albuminuria is a reliable indicator of kidney diseases, particularly at late proteinuric stages, and due to its low sensitivity, early renal injury is mostly unappreciated in clinical screening. On the contrary, neutrophil-gelatinase associated lipocalin (NGAL) is known as a sensitive marker of early renal injury and its applicability in the detection of paediatric renal injury is not evident in Sri Lanka.

Objectives: To assess the utility of urinary NGAL as a biomarker to interpret paediatric renal health in the communities affected by chronic kidney disease of uncertain aetiology (CKDu), against the conventional marker, albumin creatinine ratio (ACR).

Methods: A cross-sectional study was conducted with 273 school students (12-16 years of age) from CKDu endemic regions in Polonnaruwa district (boys: 57, girls: 69) and CKDu non-endemic regions in Monaragala district (boys: 64, girls: 83). Urinary ACR and creatinine-adjusted NGAL were considered as the markers of renal function.

Results: The median (IQR) urinary NGAL levels (ng/mg Cr) of the girls 3.45 (2.38-5.68) and boys 3.49 (2.12-6.51) in the CKDu endemic regions were significantly high ($p<0.001$) compared to those of the girls 1.54 (0.78-2.76) and boys 1.76 (0.93-3.38) in the CKDu non-prevalent areas. However, the median (IQR) ACR levels (mg/g) of girls, 2.13 (1.48-3.91) and boys, 1.64 (1.03-2.73) in CKDu endemic areas showed no significant difference ($p>0.05$) compared to the ACR levels of girls, 2.86 (1.56-3.97) and boys 2.13 (1.26-3.08) in CKDu non-endemic areas. Urinary ACR of the children was very low and indicated no albuminuria.

Conclusions: Significantly elevated urinary NGAL expression may be an important indicator of early renal injury, particularly in the absence of albuminuria in children from CKDu endemic regions. According to these preliminary investigations, NGAL appears to be a more sensitive marker of early renal injury, and its prognostic value must be validated further with detailed studies.

Keywords: Children, Chronic Kidney Disease, NGAL, Renal injury, Rural Sri Lanka

OP 04

Physical and Functional Measures among Patients with Chronic Kidney Disease in High Prevalent Areas for CKDu: A Pilot Study

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Background: Chronic kidney disease of uncertain aetiology (CKDu) is a major health issue in some provinces in Sri Lanka. The prevalence of CKDu is vary from 15.1 to 22.9% in some districts in Sri Lanka. Since last three decades, highest number of CKDu patients were reported from North Central, Uva and North Western Provinces of the country.

Objectives: To identify the physical and functional measures of chronic kidney disease (CKD) patients in high prevalent areas for CKDu.

Methods: Patients with CKD (n=123) from CKDu high prevalence areas (Thanthirimale and Wilachchiya in North Central Province) were selected. Basic demographic characteristics, clinical information, physical measures [Height, Weight and Body Mass Index (BMI)] and functional measures [3m Gait Speed (GS), Hand Grip Strength (HGS)-dynamometer test, lower limb strength-30s Rapid Chair Stand (RCS)] were obtained. Apparently healthy individuals (n=23) from the same area (age and sex compatible) were selected as controls. Patients were categorized into three groups as group 1=stage 1and 2 (n=16), group 2=stage 3 (n=66) and group 3=stage 4 and 5 (n=41) CKD and apparently healthy individuals as a baseline group (n=23). Independent sample t-test and One-way ANOVA test were used to compare the groups.

Results: The mean (SD) values of age, BMI, GS, HGS, RCS between patients and controls were, age; 60.72 ($\pm$9.03) patients vs 51.74 ($\pm$11.29) controls, p=0.001, BMI; 22.71 ($\pm$4.32) patients vs 24.72 ($\pm$3.87) controls, p=0.039, GS;0.71 ($\pm$0.18) patients vs 0.89 ($\pm$0.26) controls, p=0.006, HGS; 21.61 ($\pm$7.72) patients vs 23.88 ($\pm$7.47) controls, p=0.019, RCS; 7.52 ($\pm$3.67) patients vs 10.87 ($\pm$3.50) controls, p<0.001.One way ANOVA test revealed a significant difference between following groups.GS;0.69 ($\pm$0.17) stage 3 and 0.89 ($\pm$0.26) controls, (p=0.001), GS;0.71 ($\pm$0.19) stage 4/5 and 0.89 ($\pm$0.26) controls, (p=0.004), HGS;26.71 (9.82) stage 1/2 and 20.75 ($\pm$6.85) stage 3, (p=0.032), RCS;7.23 ($\pm$3.48) stage 3 and 10.87 ($\pm$3.50) controls, (p<0.001), RCS;7.37 ($\pm$3.87) stage 4/5 and 10.87 ($\pm$3.50) controls, (p=0.002). No significant differences were noticed between patients with stage 1 and 2 CKD and controls (p>0.05) in all 3 functional tests.

Conclusions: Significant decline of functional measures were observed in patients with stage 3, 4 and 5 CKD. However, no difference was observed between controls and patients with stage1 and 2 CKD.

Keywords: *Chronic Kidney Disease, Functional Tests, Physical Measures*

OP 05

Pregnancy, Childbirth, and Infant Care-related Information-seeking of Pregnant Women Admitted to the Antenatal Wards at Teaching Hospital Mahamodara, Galle

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Background: Information-seeking plays an effective role in self-care of pregnant mothers and the advancement of their quality of life during pregnancy. Pregnant women need more relevant information about caring themselves, babies and childbirth. Therefore, identifying the information needs of pregnant women is essential to provide relevant and accurate information.

Objectives: To evaluate the pregnancy, childbirth, and infant care-related information-seeking of pregnant women admitted to the antenatal wards at Teaching Hospital Mahamodara (THM), Galle, Sri Lanka.

Methods: A descriptive cross-sectional study was conducted among the pregnant women admitted to antenatal wards at THM, Galle. Data were collected from 420 pregnant women by using a pre-tested, interviewer-administered questionnaire which was developed by the principal investigator. Questionnaire consisted of socio-demographic factors, information needs, sources and barriers of getting information. Data were analysed with descriptive statistics, Chi-square test and independent sample t-test using SPSS version 25.0.

Results: Of the participants, 138 (32.9%) indicated that they needed 'much' information about pregnancy, childbirth and infant care. Pregnant women needed information mostly regarding new-born care 158 (37.6%), health and protection of the infant 155 (36.9%), growth and development of the infant 148 (35.2%) and breastfeeding 142 (33.8%). About 112 (26.7%) of mothers needed childbirth-related information. The most common information source was family members 354 (84.3%) and most frequently reported barrier was 'failure to make a distinction between correct and incorrect information' 113 (26.9%). Gravidity ($p<0.001$) and the number of children ($p<0.001$) were significantly associated with the amount of needed information by pregnant women.

Conclusions: The information needs of the pregnant women were varied. They need more relevant information regarding pregnancy, childbirth and infant care and mothers need less information when they got experienced with their pregnancies and motherhood. As health care professionals were one of the main information sources, more relevant information should be provided for the pregnant women.

Keywords: *Childbirth, Infant care, Information-seeking, Pregnancy, Pregnant women*

OP 06

Perception of Family Carers towards Dementia Care at a Selected Healthcare Institution in Western Province: A Qualitative Study

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Background: Dementia is a major cause of disability and dependency among older people worldwide. The syndrome causes cognitive deterioration, ultimately interfering with one's ability to perform daily activities. The informal carers (e.g., family members, relatives) play a challenging role as regular carers of people living with dementia.

Objectives: To explore the perception of family carers towards dementia care followed up at a selected healthcare institution in Western Province, Sri Lanka.

Methods: This study was a descriptive exploratory qualitative study. Semi-structured in-depth interviews were conducted with a purposive sample of nine family carers, till the saturation point was achieved. Data were analysed using thematic analysis.

Results: The median age of the sample was 61 years and they were either spouses or children of the older people living with dementia. Overall, six sub themes emerged under two major themes: (a) psychological adjustment of the family carers and (b) challenges regarding care provision. The sub themes that emerged under the theme of psychological adjustment were satisfaction with care labour, effective coping with the disease, and a sense of filial piety and responsibility. The sub themes, such as inability to manage behaviour and psychological symptoms, family support and other family commitments were identified under the theme addressing challenges.

Conclusions: Although a majority of family carers identified their inability to control symptoms related to the disease, the family commitment and support as challenges for the care, they had psychologically adjusted to the situation due to their own satisfaction being a care labourer for the closest family member. Social awareness programmes and social support services may help to overcome these challenges for the family carers.

Keywords: Dementia care, Family carers, Perception

OP 07

Association between Depression and Quality of Life among Institutionalized Older Adults in Kurunegala District

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Background: Prevalence of depression is higher among older adults ≥60 years in the world. Depression is a serious medical illness that negatively affect physical health and psychological health. The association between quality of life (QoL) and depression in institutionalized older adults has not been adequately studied in Sri Lanka.

Objectives: To assess the association between depression and QoL among institutionalized older adults in Kurunegala district, Sri Lanka.

Methods: A descriptive cross-sectional study was conducted in five elderly homes in Kurunegala district. The population was composed of 164 residents and their socio-demographic data were collected by using an interviewer administered questionnaire. Geriatric depression, QoL and mental status were assessed by using Geriatric Depression Scale (GDS), World Health Organization Quality of life-Bref (WHOQOL-BREF) and Mini Mental State Examination (MMSE) scale. Data were analysed using SPSS version 25.0.

Results: A total of 164 older adults were recruited for the study. According to MMSE, the sample of 56 (34.1%) was excluded as their cognitive impairment. Other 108 (65.9%) of subject were used as the final sample. The majority (n=64, 59.3%) of study sample was in the age category of 70-79 years and 63.9% were female. About 69% of institutionalized older adults had depression. Among them, 35% had mild depression, 25% had moderate depression and 9% had severe depression. The mean (SD) of the total QoL scores was higher in older adults without depression compared to older adults with depression [57.6 (±3.7) vs 40.0 (±3.9), $p<0.004$].

Conclusions: This study found that there is a relationship between depression and QoL among institutionalized older adults in Kurunegala district. Therefore, QoL among older adults can be improved by improving their psychological health status. Furthermore, these study findings can be used as a baseline to plan preventive strategies for enhancing health status of the study population.

Keywords: Geriatric depression, Kurunegala district, Older adults, Quality of Life

OP 08

Factors Associated with Treatment Default among Patients with Cancers during COVID-19 Pandemic at the National Cancer Institute, Sri Lanka

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Background: Anti-cancer therapy is vital to mitigate and/or irrigate the cancers and treatment default affects the progression of disease manifestation. Identification of factors that contributes to default treatment is important to improve survival rate and quality of life.

Objectives: To identify factors associated with treatment default among patients with cancer during the COVID-19 pandemic at the National Cancer Institute Sri Lanka.

Methods: A descriptive cross-sectional study was carried out among randomly selected 250 adult patients with cancers attending the National Cancer Institute, Sri Lanka from November 2021 to January 2022. A pre-tested, interviewer-administered questionnaire was used to collect data. It consisted of baseline characteristics, cancer-related details, and factors that contribute to default treatment. Data were analysed using SPSS version 25.0 and Minitab version 18.0.

Results: Mean (SD) age of participants is 53.18 ($\pm$7.32) years old. The majority were male (57.6%), and non-employed (65.2%). Commonest cancers among study population included breast (20.4%), blood (16%), colon (14.4%), and lung (12.8%). About 90% of patients received chemotherapy and approximately 50% of the patients received radiotherapy and surgery. Reliability and validity requirements included Cronbach's Alpha=0.527, KMO value=0.702, Bartlett's test $p<0.001$ at 95% CI). Based on factor analysis, 16 factors contributing to default treatment were reduced to five common factors. Those common factors included; patient experience, suicidal ideas, COVID-19 and financial issues, ambulation, transport facilities, and other patient-related factors. Age was associated with patient experience ($p=0.013$), ambulation and transport facilities ($p=0.006$), having suicidal ideas ($p=0.001$), termination of cancer treatment ($p=0.027$). The level of education was associated with the patient experience ($p<0.001$), suicidal ideas (0.030), and termination of cancer treatment ($p=0.008$). Income was associated with the termination ($p=0.003$) and delaying treatment ($p=0.023$).

Conclusions: Age, level of income, and education were associated with delaying and termination of ant-cancer treatment. Strategies are needed to minimize the default anti-cancer treatment during the COVID-19 pandemic.

Keywords: Adults, Anti-cancer therapy, Cancer, COVID-19, Treatment, Treatment default

OP 09

Bioactivity-guided Isolation of the Antidiabetic Compound Fucosterol from the Leaves of *Coccinia grandis* (L.)

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Background: *Coccinia grandis* (L.) Voigt (Family: Curcurbitaceae) leaves are known to be a promising source for the isolation of antidiabetic compounds. Previous studies confirmed that the ethyl acetate extract of *C. grandis* leaves exerted potent α-amylase, α-glucosidase, and DPP-IV enzymes inhibitory activities *in-vitro*.

Objectives: To isolate and elucidate the structure/s of antidiabetic compound/s from the ethyl acetate leaf extract of *C. grandis* following the bioactivity-guided principle.

Methods: The ethyl acetate leaf extract of *C. grandis* was fractionated by vacuum liquid chromatography (VLC). The resultant sub-fraction with the highest antidiabetic activity was further fractionated subsequently in a stepwise manner using flash chromatography and thin-layer chromatography until a pure compound was isolated. Antidiabetic activity was determined in resulting fractions/sub-fractions and in the isolated compound using α-amylase, α-glucosidase, and DPP-IV enzyme inhibitory assays. The structure of the isolated compound was elucidated using ^{1}H and ^{13}C Nuclear Magnetic Resonance (NMR) data and confirmed using FT-IR spectroscopy. Physical appearance and melting point of the compound were noted.

Results: The ethyl acetate extract of *C. grandis* yielded four VLC sub-fractions; EA_1, EA_2, EA_3, and EA_4. The EA_4 was the most active sub-fraction which showed the highest inhibitory enzyme activities of α-amylase, α-glucosidase, and DPP-IV as IC_{50} 7.13 (±0.36), 0.40 (±0.02) mg mL^{-1}, and 28 (±2) µg mL^{-1}, respectively. The subsequent isolation steps on EA_4 yielded a pure pale-yellow compound with a melting point of 134-136ºC. On the basis of the spectroscopic data, the pure compound was identified as fucosterol. α-Amylase, α-glucosidase, and DPP-IV inhibitory activities of fucosterol were determined to be IC_{50} 0.77 (±0.01), 0.03 (±0.00) mg mL^{-1}, and 52.0 (±4.0) µg mL^{-1}, respectively. α-Glucosidase inhibitory activities of EA_4 and fucosterol were significantly higher than that of acarbose ($p<0.05$). This is the first report on isolation of fucosterol from *C. grandis* leaves.

Conclusions: The compound, fucosterol was isolated from the leaves of *C. grandis* for the first time and it exerted α-amylase, α-glucosidase, and DPP-IV inhibitory potential *in-vitro*, indicating its potency to act as an antidiabetic agent.

Keywords: Antidiabetic compound, Bioactivity-guided principle, Coccinia grandis, Fucosterol

OP 10

Menopause Specific Quality of Life of Post-menopausal Women in Kotapola Medical Officer of Health Area

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Background: Menopause is a natural phenomenon experienced by women with different menopause-related discomforts. These discomforts lead to impairment of menopausal specific quality of life (MENQOL) that can be identified in four main domains: vasomotor, psychosocial, physical, and sexual.

Objectives: To assess the MENQOL and socio-demographic and gynaecologic factors associated with MENQOL among postmenopausal women (PMW).

Methods: A descriptive cross-sectional study was done with 202 PMW in the Kotapola medical officer of health (MOH) area, Matara district. PMW who menopause naturally were selected with multi-stage cluster sampling. The data were collected using an interviewer administered questionnaires containing sociodemographic and gynaecologic information, and validated MENQOL questionnaire.

Results: A majority of the participants (52.0%) were within the 50-60 age group. A majority experienced night sweat as the predominant menopausal symptom (n=141; 69.8%). The mean total MENQOL was 3.36 ($\pm$0.49). The highest impaired MENQOL was observed in the physical domain (2.02$\pm$0.32). The majority (71.8%) of PMW had low MENQOL, while 25.2% and 3.5% of PMW had moderate and high levels of MENQOL, respectively. Among the sociodemographic factors, only occupational status (p=0.01) was associated with MENQOL. Age of menarche (p<0.001), duration of menstruation period (p=0.002), had period of scanty bleeding (p<0.001), irregular menstruation (p=0.001), menopause age (p=0.001), number of children (p=0.015) and breast-feeding duration (p<0.001) had significant associations with MENQOL among the gynaecologic factors.

Conclusions: Majority of PMW experienced low levels of MENQOL associated with occupational status, age of menarche, duration of menstruation period, menopausal age, number of children, and breast-feeding duration. MENQOL and associated factors provide clues for strategies for improving MENQOL in PMW.

Keywords: Menopause Specific Quality of Life, Post-menopausal women, Socio-demographic factors, Gynaecologic factors

OP 11

Impact of Lowering Neonatal TSH Cut-Off Value in the New-born Screening Program for Detecting Congenital Hypothyroidism

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Background: The national guidelines for management of congenital hypothyroidism (CH) in Sri Lanka, advocates the cut-off value of thyrotrophin (TSH) level as above 20 mIU/L for notification by the heel-prick blood spot screening program. The impact generated by the application of this cut-off is largely unknown.

Objectives: To determine the impact of lowering the cut-off for detecting CH babies in year 2021 in the new-born screening program run at the Nuclear Medicine Unit (NMU), Faculty of Medicine, University of Ruhuna.

Methods: All the babies who were screened by the NMU in year 2021 were included in the study. The usual cut-off level of 20 mIU/L used for the notification has been lowered to 15 mIU/L. All babies between 15-20 mIU/L were considered as screening positives. They were requested to get the serum TSH levels done at their relevant paediatric clinics and the results were obtained by contacting them over the phone.

Results: Total of 137,879 babies out of 144,126 live births in the region were subjected to CH screening in 2021. Of them 272 babies were detected and referred as screening positive (neonatal TSH>15 mIU/L). There were 52 babies with TSH levels between 15-20 mIU/L and 7 became confirmed positive (serum TSH>10 mIU/L) while the remainder were confirmed negative (serum TSH<10 mIU/L). The total confirmed positive number in 2021 was 107 while the outcome of 10 babies is yet to be traced. Hence, lowering the nTSH cut-off could contribute to 6% of the total CH babies identified in year 2021.

Conclusions: Lowering the neonatal TSH cut-off for notification has been able to detect neonates who would not be detected if the universal cut-off of above 20 mIU/L was used. The impact of detecting these babies before developing any neurophysiological symptoms need to be assessed in follow up studies.

Keywords: *Congenital hypothyroidism, Cut-off value, Screening positive*

OP 12

Does Family Influence the Development of Substance Use Disorder? Residential Rehabilitees' Perceptions

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Background: Substance use disorder (SUD) is influenced by several biopsychosocial factors. Family factors are perceived to contribute to an individual's vulnerability in developing SUD.

Objectives: To identify the characteristics of individuals with SUD and family factors perceived to influence the development of SUD in residential rehabilitees in selected centres in Sri Lanka.

Methods: A descriptive cross-sectional study was conducted in conveniently selected 205 rehabilitees in six selected residential drug rehabilitation/treatment centres in Sri Lanka. Individuals over 18 years of age who gave voluntary informed consent were recruited to the study. Those who were experiencing acute disturbances in the withdrawal period were excluded. Data were collected using interviewer-administered pre-tested questionnaire and analysed using descriptive statistics.

Results: The majority of the participants were males (98.5%, n=202) between the ages of 18-48 years. All were poly-drug users with a mean (SD) duration of substance use of 7 ($\pm$5) years. Most of the participants had initiated substance use at 15-18 years of age or earlier (71.7%, n=147). Only a few participants responded that their mother (4.7%, n=9) or father (2.1%, n=4) had never received a formal education. Parents of 37.7% (n=77) of the participants had been employed. More than half (67.2%, n=137) perceived that family factors had contributed to the development of SUD. Family negligence (27%, n=55), strict parenting (20.6%, n=42), loss of a family member (12.3%, n=25), presence of an addicted family member (4.9%, n=10), presence of an addicted relative at home (5.9%, n=12) and divorce or separation of parents (5.9%, n=12) were perceived as the most important family factors in developing SUD.

Conclusions: The study contributes to the notion that family factors may contribute to an individual's vulnerability in developing SUD. Drug prevention or rehabilitation programme should emphasize and address family factors which can contribute to instigating and upholding substance use behaviour to get the best outcome of the rehabilitation programme.

Keywords: Family factors, Residential treatment, Substance use disorder

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OP 13

Depressive Symptoms and Associated Factors among Pregnant Mothers Attending Antenatal Clinics at Teaching Hospital Mahamodara

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Background: Pregnancy and childbirth are described as periods of happiness in a women's life. Unfortunately, this period has increased the risk for mental health issues. Maternal depression is the commonest mental health disorder identified, and unlikely to postnatal depression, antenatal depression has drawn less attention.

Objectives: To describe the depressive symptoms and its associated factors among pregnant mothers attending antenatal clinic.

Methods: A hospital based descriptive cross-sectional study was conducted at Teaching Hospital Mahamodara, Galle. Pregnant mothers (n=320) with a ≥12 weeks of gestation were evaluated. Validated Edinburgh Postnatal Depression Scale (EPDS) was used to assess depressive symptoms. An EPDS score ≥10 considered as probable depression cases. Data were analyzed using SPSS version 26.0. Variables having $p<0.05$ were considered as statistically significant.

Results: The mean (SD) age of the participants was 28.45 (±5.69) years with a range of 15 to 42 years. The probable antenatal depression was found to be in 30.6% (n=98) of the participants. Antenatal depressive symptoms were associated with quality of time spend with family [$r(318)=0.32$, $p<0.001$], gestational weeks [$r(318)=0.12$, $p<0.05$], lower education [$F(4, 315)=3.35$, $p=0.01$], multiparous [$F(2, 317)=3.41$, $p=0.03$], unplanned pregnancy [$t(318)=-3.27$, $p=0.001$], antenatal morbidities [$t(318)=8.67$, $p<0.001$], presence of mental disorder [$t(318)=2.31$, $p=0.021$] and experience of suicidal attempts by a family member [$t(318)=2.85$, $p=0.005$].

Conclusions: The study revealed that nearly two in five antenatal mothers are suffering from depressive symptoms. Therefore, not only postnatal mothers but also antenatal mothers should be screened for depressive symptoms and helped to improve their psychological state.

Keywords: *Antenatal clinics, Antenatal mothers, Depressive symptoms, Pregnancy, Teaching Hospital Mahamodara*

OP 14

Knowledge on Medico-legal and Ethical Duties Related to Child Abuse among Paediatric Nursing Officers: A Descriptive Cross-sectional Study

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Background: Child abuse is common in Sri Lankan context. Nurse is a member of the healthcare team who manages the victimized children admitted to paediatric wards. Therefore, nurses should have adequate knowledge on child abuse, medico-legal and ethical duties towards an abused child and it is important for better management and care. However, this aspect has not been explored adequately worldwide.

Objectives: To identify the knowledge on child abuse, medico-legal duties on child abuse and ethical duties on abused children among paediatric nurses in a major children's hospital in Sri Lanka.

Methods: A descriptive cross-sectional study was conducted using randomly selected sample of registered nursing officers (n=392) from Lady Ridgeway Hospital (LRH), Colombo. The data were collected using a self-prepared, pre-tested, self-administered questionnaire. Data were analysed using the descriptive statistics and Chi-square test with SPSS version 25.0. Knowledge scores including the knowledge on child abuse, medico-legal duties and ethical duties on child abuse and the overall score were calculated. Overall score was divided into three categories of knowledge as low (0-20), moderate (21-40) and high (41-61).

Results: Majority of paediatric nursing officers were Sinhalese (99.7%) and Buddhist (97.4%). Of the participants, 41.3% were below thirty years of age. Mean (SD) overall knowledge score was 37.23 ($\pm$6.96). Further, knowledge on child abuse, knowledge on medico-legal duties and ethical duties were 12.76 ($\pm$2.90), 16.49 ($\pm$4.14) and 7.98 ($\pm$1.77), respectively. Majority (59.7%, n=234) of nurses had high level of knowledge while 37.5% (n=147) had moderate level of knowledge. Prior training on medico-legal and ethical duties towards child abuse (p=0.038) and gender (p=0.034) had significant associations with the overall knowledge on child abuse.

Conclusions: Most of the pediatric nursing officers in LRH had moderate level of knowledge on child abuse, related medico-legal and ethical duties on child abuse. The level of knowledge was associated with the prior training and gender. All the nurses should have high level of knowledge to enhance the care and rehabilitation of abused child. Therefore, further continuous training is recommended.

Keywords: Child abuse, Ethical duties, Knowledge, Medico-legal duties, Pediatric nurses

OP 15

Evaluating Knowledge of Antibiotic Resistance among First Year Health Science Undergraduates in University of Ruhuna: A Cross-sectional Study

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Background: Antibiotic resistance (AR) has become a major global health problem. Poor knowledge about antibiotic usage and malpractices have directly contributed to the development of AR. As healthcare providers, identifying the knowledge of health science students on AR is important in planning effective interventions aiming for safe usage of antibiotics.

Objectives: To assess the knowledge of AR among first year undergraduates of Faculty of Allied Health Science, University of Ruhuna.

Methods: This is a descriptive cross-sectional study. Voluntary undergraduates in the first semester of the first academic year in 2021, not studied about antibiotics and AR during their academic programme, were recruited. A self-administered questionnaire was distributed via a Google form during organized zoom meetings. It consisted of 17 questions to assess knowledge on antibiotics and AR. Each correct answer was given one mark and zero mark was given for a wrong answer. Total knowledge score was calculated out of 17 for each participant. Frequencies and percentages of participants with correct answers were calculated using the SPSS version 26.0.

Results: Among the participants (n=190) more than 70% were females. Mean (SD) age was 22 ($\pm$0.86) years. Approximately 79% (n=151) had a total knowledge score <9 indicating below average knowledge about antibiotics and AR. Of participants, 90% (n=169) knew that antibiotics are used against pathogenic bacteria. However, the majority were not aware about the development of AR (92%, n=174) and its impact on curing infections (84%, n=158). More than 30% (n=65) had the false belief that antibiotics should be used always to cure diseases such as the common cold. Significant numbers of participants (54.5%) were not aware about the reasons for developing AR. Majority (60%, n=115) believed that if a person feels better after partially completing the antibiotic course, he/she can terminate the therapy immediately.

Conclusions: Majority of study participants had poor knowledge about proper usage of antibiotics and development of AR. Improving the knowledge about rational usage of antibiotics is essential to prevent development of antibiotics resistance which could generate fatal situations in future.

Keywords: *Antibiotics, Antibiotic resistance, Knowledge, Undergraduates*

OP 16

Linguistic and Psychometric Validation of Sinhala Version of Pregnancy-related Anxiety Questionnaire-Revised 2

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Background: Pregnancy-related anxiety (PrA) is a specific type of anxiety that can occur during the perinatal period. PrA has negative impacts on childbirth. Pregnancy-related Anxiety Questionnaire-Revised 2 (PRAQ-R2) is one of the most frequently used instruments to assess PrA. Considering its ability to assess PrA in pregnant mothers, PRAQ-R2 will be a worthy questionnaire to be validated in Sri Lankan setting for future usage.

Objectives: To validate the Sinhala version of PRAQ-R2.

Methods: A validation study was conducted among a consecutive sample of 111 mothers who attended the antenatal clinics in the Akmeemana MOH area in Galle district, Sri Lanka. The PRAQ-R2 was translated to Sinhala using the standard translation/back-translation method. Content and face validity were evaluated. Internal consistency was assessed using Cronbach's alpha and test-retest reliability was assessed using intraclass correlation coefficient (ICC). To assess concurrent validity, along with the PRAQ-R2, previously validated Sinhala version of Pregnancy Anxiety Screening Scale (PASS) was administered. Concurrent validity was evaluated by calculating Pearson correlation coefficients.

Results: The participants were aged between 24-29 years (n=42, 37.8%). There were 39.6% (n=44) of primi mothers. The questionnaire demonstrated high internal consistency (α=0.87) and that indicates the questionnaire has a consistent structure. The ICC (with a 95% confidence interval) was 0.997, showing consistent results if the test was repeated. Based on the expert opinion, the modified 12 items of the Sinhala version of the PRAQ-R2 questionnaire were clear, understandable, and related to the Sri Lankan culture. Significant correlation between the scores of PRAQ-R2 and PASS scales showing a high concurrent validity (*r*=0.745, *p*<0.001) and that indicates both scales measured similar constructs.

Conclusions: The Sinhala translation of the PRAQ-R2 is a valid and reliable instrument to assess PrA among women in Sri Lanka.

Keywords: Linguistic, Pregnancy-related anxiety questionnaire-revised 2, Psychometric validation, Sri Lanka

OP 17

Antibacterial Efficacy of Commercially Available Selected Alcohol-based Hand Sanitizers in Sri Lanka

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Background: Contaminated hands are the major mode of transmission of microorganisms from one person to another. Hand washing or hand rubbing is normally practised to remove microbes from the hands. If the hands are not visibly soiled, a handrub can be used as an effective substitute for handwashing. With the pandemic of COVID-19, a large number of different hand sanitizers were appeared at the market. The use of sub-standard hand sanitizers could give poor assurance leading to disease transmissions.

Objectives: To determine the antibacterial efficacy of five different commercially available Alcohol-Based Hand Sanitizers (ABHS) in Sri Lanka.

Methods: Samples of five different commercially available ABHSs, labelled as 'A', 'B', 'C', 'D' and 'E', and 70% in-house prepared alcohol solution were used for this study. Antibacterial activity of each sample was determined using three methods. The phenol coefficient was determined against *Staphylococcus aureus* (ATCC 25923) while the well diffusion method was used to evaluate the antibacterial activity of the products against *S. aureus* (ATCC 25923) and *Escherichia coli* (ATCC 25922). Activity indexes were calculated for each ABHSs in well diffusion method. Each ABHS was used to determine the reduction of colony counts in hands by hand hygiene with different hand sanitizers.

Results: Among the tested hand sanitizers, only the hand sanitizer 'A' exhibited a phenol coefficient of 2.86. Others had phenol coefficient less than one. Activity indices of hand sanitizers 'A' and 'E' were 2.75, 2.00 (against *S. aureus)* and 1.75, 1.44 (against *E. coli*), respectively. 'B' and 'C' had 0.98, 0.81 against *S. aureus* and 0.79, 0.75 against *E. coli,* respectively. Activity indices of 'D' had 0.00 against both organisms. All tested ABHSs and 70% in-house prepared alcohol solution significantly *(p<0.05)* reduced the colony counts in hands as observed by the hand hygiene test.

Conclusions: Only the hand sanitizer 'A' was more efficient than the standard phenol solution. Only the sanitizers 'A' and 'E' had better activity indices when compared with in-house prepared 70% alcohol. Interestingly, all the tested ABHS were effective in significantly reducing the colony counts in hands.

Keywords: Alcohol-based hand sanitizers, Antibacterial activity, Hand rubbing, Sri Lanka

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OP 18

In-vitro Antimicrobial Activity of *Thespesia populnea (L.)* against Clinical Isolates of Methicillin-Resistant *Staphylococcus aureus* (MRSA)

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Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) is a common and aetiological agent of many infections which is amenable to treatment with many antibiotics.

Objectives: To determine *in-vitro* antibacterial activity of different solvent extracts of leaf of *Thespesia populnea* (L.) against MRSA.

Methods: Aqueous, ethanol, and acetone leaf extracts of *T. populnea* were tested against ten clinical isolates of MRSA. Disc diffusion method was performed using each plant extract (3 mg/mL, 30 mg/mL, and 300 mg/mL) impregnated discs in triplicates. The broth microdilution method was performed using two-fold dilutions of the plant extracts (aqueous-300 mg/mL, ethanol-30 mg/mL, and acetone-6.5 mg/mL). Vancomycin (2 µg/mL) and 20% DMSO were used as positive and negative controls respectively for broth methods. Mean value of the lowest concentrations which didn't show turbidity was taken as MIC and mean value of the lowest concentrations which did not show growth on blood agar was taken as MBC.

Results: In disk diffusion method, the ethanol extracts at 300 mg/mL, and 30 mg/mL showed range of zone diameters (mean±SD) as 12.46 (±0.54) - 9.09 (±0.90) mm and 10.47 (±0.62) - 7.73 (±0.57) mm, respectively against all tested isolates. The acetone extracts at 300 mg/mL, 30 mg/mL and 3 mg/mL demonstrated zone diameters of 13.41 (±0.59) - 10.09 (±0.97) mm, 11.13 (±0.07) - 9.06 (±0.35) and 10.43 (±0.62) - 7.41 (±1.54) mm, respectively. The ethanol extract at 3 mg/mL was efficacious against three isolates of MRSA [zone diameters were in the range of 8.07 (±0.70) - 6.40 (±0.52) mm]. Inhibitory zones were not shown by the aqueous extract at the 300 mg/mL, 30 mg/mL, 3 mg/mL against any clinical isolate of MRSA. The acetone extract had a MIC range of 0.10 - 0.75 mg/mL, MBC range of 0.10 - 0.75 mg/mL indicating better antimicrobial activity than the aqueous extract (MIC: 150 - 300 mg/mL, MBC: 300 mg/mL) and ethanol extracts (MIC: 0.47 - 15.00 mg/mL, MBC: 0.47 - 15 mg/mL) for all 10 MRSA isolates.

Conclusions: Ethanolic and acetone extracts of the leaf of *T. populnea* demonstrated antimicrobial activity against MRSA. The acetone extract had the lowest MIC against all tested clinical isolates of MRSA.

Keywords: Antimicrobial activity, Methicillin resistance Staphylococcus aureus, Minimum bactericidal concentrations, Minimum inhibitory concentrations, T. populnea

OP 19

Detection of Anti-A and Anti-B Haemagglutinin Titre in Blood Group O Donor Plasma and its Correlation to Donor Age and Gender

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Background: Though the blood group O donors are considered as the universal donors, their plasma contain both types of antibodies named anti-A and anti-B. These antibodies can cause Acute Haemolytic Transfusion Reactions (AHTR) due to passive transfer of antibodies. These antibodies can be detected using titration techniques.

Objectives: To detect the anti-A and anti-B haemagglutinin titre in blood group O donor plasma and find its correlation to donor age and gender.

Methods: A cross-sectional analytical study was performed with 132 blood group O donors (44.6% females and 55.3% males). Samples were categorized into four groups according to age: 18-28, 29-38, 39-48 and 49-55 years. Samples were analysed using standard tube technique. Titers of 1:64 or higher was considered as the high titre, for anti-A and anti B. Titers of ≤ 32 was considered as low titre. Statistical analysis for the correlation between titre and donor age and gender (Spearman's correlation coefficient) was conducted using SPSS version 25.0.

Results: Overall, 45.5% of O donors had high antibody titres. Among them, the highest titres were observed in age groups between 18-28 and 29-38. Antibody titre levels were considerably low in older age groups (39-48 and 49-55). There was a statistically significant strong negative correlation (r=-0.733, p<0.01) between donor age group with anti-A titre and with anti-B titre (r=-0.756, p<0.01) among male donors. The above correlation in female donors was negative [anti-A titre (r=-0.235, p=0.073) and anti-B titre (r=-0.331, p=0.01)], but not as strong as observed in male donors.

Conclusions: Results show that only selected low titre O donor blood products can be used for safe transfusions during non-specific ABO transfusions. It is recommended to do more studies with higher number of samples to draw further conclusions.

Keywords: Acute haemolytic transfusion reaction, Haemagglutinin titre, Titration techniques

OP 20

Effectiveness of Drama Therapy to Determine the Behavioral and Attitudinal Changes on Alcohol Used People: An Experimental Study

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Background: Alcohol is a legal and controlled substance. Alcohol consumption harms brain cells and it causes imbalance to brain chemistry. Drama therapy is a psychotherapeutic method, which is used to treat people addicted to heavy alcohol consumptions.

Objectives: To assess the effectiveness of drama therapy in behavioural and attitudinal changes on people who use alcohol.

Methods: This experimental study was conducted in Base Hospital, Tangalle using a conveniently selected sample of 22 non hospitalized alcohol users. Eight drama therapy sessions (role playing and empty chair) were conducted for 8 weeks. A content and face validated, pre-tested, researcher administered questionnaire was used to assess nine categories related to behavioural and attitudinal changes at the beginning, middle and the end of the study using modified assessment categories from Model of Human Occupation Screening Tool. Participants were assessed in each 3 stages giving a score from 0 to 9 where 0 indicated the abuse level or a dysfunctional level while 9 indicated an improved level.

Results: The mean (SD) age of the participants was 39.8 (±11.16) years and the mean (SD) duration of the alcohol consumption was 17.3 (±11.44) years. The initial, middle and the end assessments were completed by 18, 14 and 3 participants, respectively. At the middle of assessment, 78.6% (11/14) have improved their saying 'No' skills, 50.0% (7/14) have improved assertiveness skills, 35.7% (5/14) have improved in adaptation for the alcohol and 71.4% (10/14) interest for overcoming alcohol consumption. About 64.3 % (9/14) have improved their commitment for quitting the alcohol consumption, 28.6% (4/14) have improved their stress management and coping strategies. At the end assessment 100% (3/3) of participants have improved above mentioned categories.

Conclusions: The drama therapy is effective in improving the behavioral and attitudinal changes on people who use alcohol in a positive way.

Keywords: *Alcohol, Attitudes, Behaviours, Drama therapy*

OP 21

Hepatic Oxidative and Histological Changes in High Fat Diet and Streptozotocin-induced Diabetic Rats

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Background: An experimental animal model of type 2 diabetes mellitus (T2DM) facilitates the studying of antidiabetic and antioxidative effects of novel drugs. Feeding high-fat diet (HFD) followed by a low-dose streptozotocin (STZ) injection is used to induce diabetes and oxidative changes in the experimental animal model of diabetes.

Objectives: To investigate oxidative and histological changes in the liver of Wistar rats with T2DM.

Methods: Thirty Wistar rats were divided into five groups as group 1: healthy control, group 2: HFD control, group 3: HFD for four weeks + STZ (30 mg/kg, ip), group 4: HFD for four weeks + STZ (40 mg/kg, ip) and group 5: HFD for four weeks + STZ (50 mg/kg, ip). The liver tissues were excised from sacrificed animals in all groups and were used for the histological assessment and biochemical assessment of lipid peroxidation. Malondialdehyde (MDA) concentration in the liver homogenate was measured using thiobarbituric acid method to assess the level of lipid peroxidation. Liver tissues were stained in H&E and a semi-quantitative assessment was conducted to examine histological changes.

Results: The MDA concentration of the healthy control group, HFD control group, STZ-30, STZ-40 and STZ-50 mg/kg were 15.81 ($\pm$2.09), 20.74 ($\pm$1.97), 24.27 ($\pm$6.20), 32.87 ($\pm$1.13), 128.76 ($\pm$14.89) nmol/protein (g), respectively. There was a significant increase in MDA concentration ($p<0.05$) in STZ- 40 and STZ-50 mg/kg groups compared to the healthy control group. The incidence of fatty degeneration, micro and macrovesicular changes, inflammatory infiltration, and other histological features of STZ induced diabetes mellitus were more pronounced in rats treated with the highest dose (50 mg/kg) of STZ. Accordingly, the highest mean histological score (10) was obtained for rats induced with the STZ-50 mg/kg.

Conclusions: STZ-induced oxidative stress, hepatocyte damage and changes in hepatic morphology were dependent on the dose of STZ. Histological findings corroborated the biochemical evidence of oxidative stress in high-fat fed low dose STZ induced diabetic rats.

Keywords: High fat diet, Malondialdehyde, Oxidative stress, Streptozotocin, Type 2 diabetes mellitus

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OP 22

Emotional Intelligence and Empathy among Nursing Undergraduates at the Kotelawala Defence University, Sri Lanka

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Background: Emotional Intelligence (EI) is defined as the ability of understanding and managing one's emotions on their own. The ability to understand others' feelings and experiences is defined as empathy. EI and empathy during patient-student nurse communication are critical components in successful caring and understanding of health issues. However, there is a dearth of studies in Sri Lanka on evaluating the relationship between empathy and EI among nursing undergraduates.

Objectives: To assess factors associated with EI and empathy, and the relationship between them among nursing undergraduates in the Faculty of Allied Health Sciences (FAHS), Kotelawala Defence University (KDU), Sri Lanka.

Methods: A descriptive cross-sectional study was carried out recruiting all nursing undergraduates (n=224) from FAHS, KDU. A pre-tested, self-administered questionnaire, cross-culturally adapted Schutte Self-Report Emotional Intelligence Test and Toronto Empathy Questionnaire were used to collect demographic data, EI and empathy, respectively. Data were analysed using Mann Whitney U, Kruskal Wallis and Spearman's correlation coefficient tests with SPSS version 25.0.

Results: The majority of the participants were females (81.20%) and in the first year (43.7%). The mean (SD) EI was 126.72 ($\pm$22.35) and the mean Empathy was 42.83 ($\pm$7.38) in the study population. EI score correlated moderately with empathy score ($p<0.001$, $r=0.602$). There were significant mean differences in EI among religion ($p=0.006$), year of study ($p=0.042$), the main reason for selecting nursing ($p=0.009$), interest in nursing ($p=0.031$) and satisfaction of nursing undergraduate life ($p=0.001$). There were significant differences in empathy among the two genders ($p=0.003$), year of study ($p<0.001$), main reasons for selecting nursing ($p=0.004$), various interests in nursing ($p=0.025$) and satisfaction of nursing undergraduate life ($p=0.006$).

Conclusions: EI is positively correlated with empathy among nursing undergraduates at KDU while factors such as year of study, reason for selecting nursing and satisfaction of nursing undergraduate life affect both attributes.

Keywords: Emotional intelligence, Empathy, Nursing undergraduates, Sri Lanka

OP 23

Level of Physical Activity and Perceived Barriers among Nurses in COVID-19 Wards, National Hospital Sri Lanka: A Cross-sectional Study

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Background: Physical activity is a known positive reinforcement for health and an effective coping behaviour against pandemic-related stressors. Physical activity and self-care routines of the nurses were disturbed due to the heavy workload and intense responsibilities of the COVID-19 pandemic. Thus, it is instrumental to assess the level of physical activity of Sri Lankan nurses during the COVID-19 pandemic since the data are sparse.

Objectives: To evaluate the level of physical activity and perceived barriers to engage in physical activity among nurses who work in COVID-19 wards, at National Hospital Sri Lanka (NHSL).

Methods: A descriptive cross-sectional study was conducted among conveniently selected 123 nurses who work in COVID-19 wards (12 wards) at NHSL. The nursing officers were invited via a Google form using social media platforms. Data were collected using a self-administered questionnaire which consisted of International Physical Activity Questionnaire (IPAQ) and questions to assess the perceived barriers. Levels of physical activity were categorized as inactive (<600 MET-minutes per week), minimally active (600-2999 MET-minutes per week), and Health Enhancing Physical Activity (HEPA) (>3000 MET- minutes per week). Data were analysed with descriptive statistics using IBM SPSS version 25.0.

Results: Of the participants, 86.1% (n=106) were female, Grade III nursing officers (59.3%, n=73) with the mean (SD) age of 33 ($\pm$7) years. Only 12.1% (n=15) nurses engaged in regular exercises. Of the nurses, 34.1% (n=42) were inactive, 54.5% (n=67) were minimally active and only 11.4% (n=14) engaged in health enhancing level of physical activity. Most prevalent perceived barriers for engaging physical activity were tiredness due to job (51.2%, n=63), not having enough time (28.4%, n=35) and not interested to do regular exercises (8.1%, n=10).

Conclusions: Most of the nurses who work at COVID-19 wards were not engaged in an adequate level of physical activity and appropriate measures to overcome perceived barriers to engage physical activity among nurses are entailed.

Keywords: COVID-19, Nurses, Perceived barriers, Physical activity

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OP 24

Online Learning in the New-normal: Perspective of Undergraduates of Faculty of Allied Health Sciences, University of Ruhuna

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Background: Most of Sri Lankan universities started practicing online education, with the emergence of COVID-19. Faculty of Allied Health Sciences, University of Ruhuna (FAHS, UOR) has adopted LMS and Zoom technology as online teaching platforms since mid-2020 in order to continue the education program during the pandemic.

Objectives: To assess the views of undergraduates of FAHS, UOR on lectures and practical sessions conducted via different forms of online learning during the COVID-19 pandemic.

Methods: Data were gathered from a convenient sample of undergraduates of FAHS, UOR during the 3rd wave of the COVID-19 epidemic. The questionnaire focused on demographic data, student satisfaction in online teaching and practical, work-based training and clinical attachments, mentoring and financial circumstances during the pandemic. The questionnaire was distributed among all the undergraduates of FAHS, UOR via a google form and voluntary respondents were included to the study. Data were analysed using SPSS version 26.0. Data on student satisfaction in online teaching and practical classes are presented in this abstract.

Results: Among the participants (n=238) 56.3% were Nursing undergraduates while Pharmacy and Medical Laboratory Sciences (MLS) were 23.9% and 19.7%, respectively. The majority of the students preferred onsite lectures (86%) and practical classes (86%) compared to online platforms. Regarding online lecturing, 73% preferred live lecturing with switched on lecturer's camera and satisfaction reduced when cameras are turned off (60%). Only 35% preferred lecture recordings without conducting a live online lecture. Health science undergraduate satisfaction on online practical classes was comparatively low; Online demonstration of practical with turned on lecturer's camera-60%, simulated laboratory method-42%, sending video recording of the practical without live demonstrations-40%. Approximately 64% of Nursing undergraduates followed by 57% of MLS and 52% of Pharmacy undergraduates were satisfied with online practical classes with turned on lecturer's camera. Around 30% of female undergraduates and 45% of male undergraduates were satisfied in video recordings.

Conclusions: Majority of students preferred the live delivery of online lectures with switched on cameras than the passive delivery. However, their preference for online practical sessions were low. These observations will be helpful to improve the quality of teaching activities conducted via online modes in future for health science undergraduates.

Keywords: COVID-19, Online learning, Onsite learning, Student satisfaction

OP 25

Awareness and Practice of Adherence to COVID-19 Preventive Behaviours of Patients with Cancer at National Cancer Institute, Sri Lanka

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Background: COVID-19 is a global pandemic and strict preventive measures were introduced with the rapid spread of infection. The risk of infection is high among patients with cancers due to low immunity and disease manifestation. Adherence to COVID-19 preventive measures is vital to reduce complications and improve the survival rate of patients with cancer.

Objectives: To assess awareness and practice of adherence to COVID-19 preventive behaviours among patients with cancers at the National Cancer Institute, Sri Lanka.

Methods: A descriptive cross-sectional study was carried out among randomly selected 422 adult patients with cancers attending the National Cancer Institute, Sri Lanka for treatment. Data were collected using a pre-tested, interviewer-administered questionnaire based on demographic data, awareness, and practice of adherence to COVID-19 preventive behaviors. Data were analyzed using SPSS version 25.0.

Results: Mean (SD) age of participants is 50.2 ($\pm$15.5) years. The majority (75.6%) were female, Sinhalese (79.1%), and educated above the G.C.E. A/L (45.0%). Highly prevalent cancer types in the sample were breast (24.2%), gastrointestinal (17.5%), head and neck (13.7%) and lung (8.1%) cancers and 32.5% represent 1st stage of cancer. Chemotherapy (42.2%), radiotherapy (23.5%) and surgery 73 (17.3%) were the main treatment methods. The majority (98.1%) shows a good level of awareness and practice (77.3%) of adherence to COVID-19 preventive behaviours. While the level of awareness was associated with gender ($p=0.011$) and types of cancer ($p<0.001$), the level of practice was associated with gender ($p=0.021$), marital status ($p=0.003$), religion ($p<0.001$), nationality ($p=0.002$), education level ($p<0.001$), stage of cancer ($p=0.035$), and treatment method ($p=0.003$).

Conclusions: Awareness and practice of adherence to COVID-19 preventive behaviours are satisfactory among patients with cancers. Strategies need to be taken to continue to maintain safe behaviour to minimize the risk of getting coronavirus infection.

Keywords: Awareness, Cancer patients, COVID-19 preventive behaviours, Practice

OP 26

In-vitro Sensitivities of Clinical Isolates of *Staphylococcus aureus* against Selected Cephalosporins

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Background: *Staphylococcus aureus* continues to be a major cause of both community-acquired and health care-associated infections, including skin and skin structure infections, pneumonia, bacteraemia, endocarditis, osteomyelitis, prosthetic joint infections, and catheter-related infections. Cephalosporins are one of the most commonly used antibiotics in clinical practice due to their relatively safe and broad-spectrum activity against both Gram-positive and Gram-negative bacteria.

Objectives: To assess *in-vitro* sensitivities of control culture organism of *S. aureus* and clinical isolates of *S. aureus* against selected cephalosporins.

Methods: The control culture organism of *S. aureus* (ATCC 25923) and 48 clinical isolates of *S. aureus* from high vaginal swabs were sub-cultured on blood agar and antibiotic sensitivity tests were performed according to the CLSI guidelines and readings were taken after overnight incubation at 37ºC.

Results: The control culture organism of *S. aureus* was sensitive to all cephalosporin antibiotics except cefuroxime. Among the clinical isolates of *S. aureus*, majority (33/48, 68.7%) were methicillin resistant and 31.3% (15/48) were methicillin sensitive. All isolates (15/15, 100%) of methicillin sensitive *S. aureus* (MSSA) and 18.2% of methicillin resistant *S. aureus* (MRSA) were sensitive to cefpodoxime. All clinical isolates (100%, 48/48) of MSSA and MRSA were resistant to cefuroxime. Majority of MRSA (69.7%) isolates have shown sensitivity to cefepime whereas only 15.1% of MRSA were sensitive to cephalexin. In comparison, an equal proportion of isolates of MSSA (93.3%) was sensitive to both cefepime and cephalexin. Out of all, the least percentage of MSSA (86.6%) was sensitive to cefotaxime.

Conclusions: Cefuroxime cannot be used as an antibiotic to treat *S. aureus* related infections. Majority of clinical isolates of *S. aureus* were methicillin resistant. As an empirical treatment, infections associated with MSSA may be treated with cefotaxime, cephalexin, cefepime and cefpodoxime except cefuroxime and those associated with MRSA may be treated with cefepime.

Keywords*: Cephalosporins, Empirical, In-vitro, MRSA, MSSA*

OP 27

Bacterial Pathogens and Pathophysiological Parameters Associated with Urinary Tract Infections in Diabetes Mellitus Patients in Teaching Hospital Karapitiya

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Background: Urinary tract infections (UTIs) are more commonly encountered in diabetes mellitus (DM) patients. Prevalence of asymptomatic bacteriuria is more common compared to symptomatic bacteriuria in DM patients. Determination of causative pathogens and pathophysiological parameters associated with UTI in DM patients in Sri Lanka is invaluable to promote their health.

Objectives: To identify pathogens causing UTIs in DM patients together with their antibiotic susceptibility patterns and to determine association of certain pathophysiological parameters to UTI in DM patients.

Methods: A cross-sectional study was conducted among 60 DM patients attending to diabetic clinic, Teaching Hospital Karapitiya. Demographic data; age, gender, marital status, and pathological data; duration of diabetes, glycaemic control and type of treatment were collected using a questionnaire. Patients were instructed to collect clean-catch, mid-stream urine samples into provided sterile containers. Urine samples were cultured and processed according to the guidelines of Clinical and Laboratory Standards Institute. Antibiotic susceptibility test was performed using disc diffusion method. All the data were analysed using SPSS version 15.0.

Results: There were 7 (11.67%) positive urine cultures out of 60 samples. They all were pure growths with colony count >99. Among them 10% of the patients were asymptomatic and only 1.67% were symptomatic. There were no significant associations between diabetic UTI and each parameter of age range (p=0.870), gender (p=0.402), marital status (p=0.518), type of diabetic treatment (p=0.601) and glycaemic control (p=0.325). However, a significant relationship was found between duration of DM and diabetic UTI (p=0.001). *Escherichia coli* (*E. coli*) was the most frequent isolated pathogen (85.71%) followed by *Candida* spp. (14.29%). All the *E. coli* strains showed similar antibiotic susceptibility pattern. They all were sensitive to nitrofurantoin, amikacin, gentamycin and meropenem but resistant to cefuroxime.

Conclusions: Prevalence of asymptomatic bacteriuria is more common among patients with DM. Longer duration of diabetes for >5 years is found as a risk factor of UTI. *E. coli* is the most common pathogen among the diabetic patients having UTI.

Keywords: *Antibiotic susceptibility, Diabetes mellitus, Risk factors, Urinary tract infections*

Poster Presentations

PP 01

Daytime Sleepiness of Patients with Breast Cancer at Two Cancer Treatment Centers in Sri Lanka

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Background: Breast cancer (BC) is one of the most common cancer types among women in Sri Lanka. Daytime sleepiness (DS) describes the inability to remain awake during the daytime, which results in drowsiness or sleep. DS is a common symptom of patients with BC which is associated with many factors. BC related DS interferes with daily life activities and reduces the quality of life. The prevalence of and alternating over time in DS in women with BC are not well characterized. Identification of the severity of DS and influencing factors is critical to enhancing the quality of life of BC patients.

Objectives: To assess the prevalence and severity of DS of the patients with breast cancer and the factors influencing.

Methods: A descriptive cross-sectional study was conducted on both inward patients and patients attending oncology clinics whose age was 18-60 years in Apeksha Hospital Maharagama and Teaching Hospital Karapitiya. The study sample included 66 patients which is a subset of a sample size of 325. The data were collected using a pre-tested interviewer-administered questionnaire. Epworth Sleepiness Scale (ESS) was used as a tool to assess the DS.

Results: The mean (SD) age of 52.8 ($\pm$7.25) years. The prevalence of DS was 78.8% elaborate the results according to the ESS. The mean DS score was 9.8 ($\pm$5.39). According to the resulting scores of the ESS, about 33.3% of patients (n=22) were presented with higher normal DS (score 6-10). According to binary logistic regression analysis age (OR: 2.9; 95% CI 0.7-12.5), having comorbidities (OR: 4.9; 95% CI 0.8-33), and period of suffering from cancer (OR: 1.1; 95% CI 0.3-3.6) were recognized as the factors that influence DS. Daytime sleepiness was not influenced by the type of therapy (chemotherapy, radiotherapy, and pain management) and the presence of metastasis.

Conclusions: There is a high prevalence of DS among breast cancer patients in Sri Lanka which was associated with several factors. In Sri Lanka, most of the patients were not presented with severe excessive DS and majority of the patients had higher normal DS. The type of therapy and presence of metastasis were not associated with DS.

Keywords: *Breast cancer, Daytime sleepiness, Sri Lanka*

PP 02

Appropriateness of Using Patient Data for Calculation of Reference Intervals for Complete Blood Count Parameters of Elderly Population

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Background: Calculation of reference intervals (RI) for the population served is a standard requirement to assure accurate interpretation of laboratory test results. Conventional method or direct method of calculation of RI for laboratory parameters for elderly population is practically not feasible. Literature recommends use of indirect method as an alternative. RI are not defined for complete blood count (CBC) parameters of elderly population in Sri Lanka.

Objectives: To assess the plausibility of using patient data to calculate RI of CBC parameters of elderly patients.

Methods: A retrospective, cross-sectional study was carried out using data of all the patients >65 years stored during two consecutive years in a hospital laboratory. Reports with flagging for any parameter, reports of inpatients and repeated samples and outliers in each parameter identified using Tukey's method were excluded. Distribution plots, Q-Q plots and box plots were drawn for all refined data and visually inspected for their normality of distribution. Since data were normally distributed, RI were defined as mean±2SD. Calculated RI were compared with RI provided by manufacturer of the automated CBC analyser and with RI defined in five other countries.

Results: There was a total of 3094 CBC reports of patients >65 years of age. Of those, only 1604 (51.8%) fulfilled the inclusion criteria. Distribution plots of data of all the parameters in both male and female groups showed normal distribution. Calculated RI of all CBC parameters were similar to those of other countries. RI obtained for red cell indices, platelet count and white blood cells were similar to the RI provided by the manufacturer for adults. RI obtained for red blood cell count, haemoglobin and packed cell volume were clinically significantly lower compared to the RI provided by the manufacturer for adults.

Conclusions: When appropriate selection criteria and appropriate statistical tools are applied, patient data can be used to calculate RI for CBC parameters in elderly people. Differences observed with manufacturer defined RI confirm the need for defining laboratory's own RI for the populations served.

Keywords: *Complete blood count, Indirect method, Older population, Patient data, Reference interval*

PP 03

Positive Effects of COVID-19 Pandemic: Perception of Undergraduate Students of Allied Health Sciences at the University of Ruhuna

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Background: COVID-19 pandemic affected almost all aspects of life of people in the world. While the world was facing the outbreak of COVID-19 pandemic, undergraduates were badly affected at their core. For them, the period was undoubtedly very stressful and tight situation. However, undergraduates can focus on good things and try to come up from bad situation.

Objectives: To study the positive impacts of the COVID-19 pandemic on the Allied Health Sciences (AHS) undergraduates of at the University of Ruhuna (UoR).

Methods: A descriptive cross-sectional study was conducted among AHS undergraduates of the UoR (n=240), using an online self-administered questionnaire. Students who volunteered to participate in the study were included to represent equal numbers from Nursing, Pharmacy and Medical Laboratory Science departments. Students were randomly selected from each department (n=80) by using students name lists to represent 1st, 2nd, 3rd and 4th academic years.

Results: Of the sample, 66.7% were female and the majority (90.0%) agreed that they have experienced both negative and positive impacts of the COVID-19 pandemic. The majority of the participants got the opportunity to spend time mostly inside their homes (n=231, 96.3%), for studies (54.2%), with family members (n=232, 96.7%), for religious works (n=147, 61.3%) and for exercises (n=162, 67.5%) during the pandemic than earlier. Many have started new activities such as reading books (n=159, 66%), writing poems (n=61, 25%), gardening (n=139, 58%), cooking (n=178, 74%), meditation (n=74, 31%), exercises (n=127, 53%) and learning a new language (n=127, 49%) and some new spiritual activities [helping neighbours (n=141, 59%), helping poor (n=86, 36%), donating to COVID-19 funds (n=61, 25%)]. The majority (n=215, 89.6%) were satisfied with online lectures and had followed different online teaching methods. Government, universities, and banks have extended some important support for undergraduates during the pandemic. Undergraduates had improved their hygienic behaviours and routine habits. Of the participants, 59.2% mentioned that due to these hygienic practices, the frequency of getting infectious diseases was reduced during the pandemic.

Conclusions: COVID-19 pandemic has resulted in positive impacts on the undergraduates of the UoR with respect to their lifestyle, education, economy, health and well-being. It is important to put a positive spin on all experiences, even those are profoundly tragic.

Keywords: *COVID-19 pandemic, Perception, Positive effects, Undergraduates*

PP 04

An Overview on Secondary Metabolites of *Annona muricata* Fruit and Their Pharmacological Activities

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Background: *Annona muricata* (soursop) is the most widely grown variety of more than 70 species of *Annona* which belongs to the family Annonaceae. Soursop fruits have been used in several traditional medicinal practices in the worldwide including diarrhoea, liver diseases, heart diseases and gut parasites. The fruit extracts are now being investigated to identify various beneficial pharmacological activities.

Objectives: To gather details on secondary metabolites of *A. muricata* fruit and their pharmacological activities, based on various research studies reported in the literature.

Methods: The published scientific literature was reviewed through the search engines of ScienceDirect, PubMed, Springer, and Google Scholar by following the keywords of "*Annona muricata"*, "secondary metabolites" and "pharmacological activities".

Results: It was reported that *A. muricata* fruit contains acetogenins, alkaloids and phenolics as secondary metabolites. Annonacin is the peredominant acetogenin reported in *A. muricata* fruit. Annonamuricin A, annonamuricin B, annonamuricin C, annonamuricin D, muricenin, muricin J, muricin K, muricin L, muricin N, *Cis*-annoreticuin, epomuricenins-A, epomuricenins-B, sabadelin, epomusenin-A, epomusenin-B, epomurinin-A and epomurinin-B are also reported in the fruit. Cinnamic acid derivatives and *p*-coumaric acids are reported in *A. muricata* fruit as the major phenolic compounds while caffeoylquinic acid, dicaffeoylquinic acid, dihydrokaempferol-hexoside, fisetin, kaempferol, kaempferol 3-O-rutinoside, luteolin- 3-7-di-O-glucoside, morin and myricetin were also reported additionally. Alkaloids that were identified from *A. muricata* fruit include annonaine, nornuciferine, asimilobine, N-methylcoculaurine and reticulin were reported. Essential oils, phytosterols and aliphatic compounds were also reported in *A. muricata* fruit pulp. Several *in-vitro* and *in-vivo* studies conducted to determine the pharmacological activities of secondary metabolites of *A. muricata* fruit were mentioned in the literature. Acetogenins had revealed the antioxidant, anticancer and antidiabetic activities. Phenolics have been reported for the antioxidant, antidiabetic, antimicrobial, anti-inflammatory, antiparasitic and antihypertensive activities. Phenolics were suggested as the major secondary metabolite responsible for the antioxidant activity of *A. muricata* fruit. Alkaloids reported to have antidepressive and cytotoxic activities. Antioxidant activity has also been reported by the essential oils of fruit pulp.

Conclusions: It is deliberated to sum-up that *A. muricata* fruit is rich in different secondary metabolites with known beneficial pharmacological activities.

Keywords: Annona muricata, Pharmacological activities, Secondary metabolites

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PP 05

Comparison of Absorption Maxima of Glycosaminoglycan-DMMB Complexes of Urinary Glycosaminoglycans and Tissue-extracted Chondroitin Sulfate

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Background: Dimethyl-methylene blue (DMMB) assay is used to estimate the total glycosaminoglycan concentration in urine. Most urinary glycosaminoglycans are oligosaccharides of chain sizes from 2 DP (degree of polymerization) to 20 DP. However, high molecular weight glycosaminoglycans are routinely used as standards for urine assay.

Objectives: To study the difference in absorption spectra of glycosaminoglycan-DMMB complexes formed by pooled paediatric urine samples, chondroitin sulfate oligosaccharide (having 12 DP and commercially prepared using shark chondroitin sulfate), and chondroitin sulfate from bovine trachea (references) and use the observations to guide assay optimization and redevelopment efforts.

Methods: Ten paediatric urine samples were pooled together. Reference standards (100 µg/mL) were prepared in distilled water. DMMB dye (200 µL) was mixed with 20 µL of sample/standard and shaken for 5 minutes before the absorbance was measured. The absorption spectra of DMMB dye alone and the glycosaminoglycan-DMMB complexes were obtained by scanning the dye and the respective reaction mixtures over the wavelength range of 450-800 nm at intervals of 1 nm (at its highest spectral resolution) using a microplate spectrophotometer. Linearity of the standard curve was determined at several standard-to-dye ratios (1:3, 1:9, 1:19).

Results: The dye showed two peaks of absorption, at 593 and 648 nm. According to the difference spectra, urinary glycosaminoglycans formed complexes with an absorption peak at 513 nm in contrast to the complex formed with chondroitin sulfate from bovine trachea and chondroitin sulfate oligosaccharide at 520 and 518 nm, respectively. Accordingly, chondroitin sulfate oligosaccharide (reference) was used for subsequent assays as its absorption peak is reasonably close to that of urine. The standard curve was linear up to 100 µg/mL at 1:19 standard-to-dye ratio.

Conclusions: The maximum absorption of glycosaminoglycan-DMMB complexes formed by urinary glycosaminoglycans is significantly lower compared to those of the chondroitin sulfate references observed in the present study and other tissue extracted glycosaminoglycans reported in the literature. This finding is useful in determining the wavelength/optic filters for the DMMB assay.

Keywords: *Absorption spectra, Chondroitin sulfate, Dimethyl-methylene blue, Glycosaminoglycan, Maximum Absorption, Urine*

PP 06

Pharmaceutical Waste Management in Community Pharmacies and Hospitals in the SAARC Region: A Narrative Review

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Background: Pharmaceutical waste is a type of healthcare waste that includes expired, unused, spilled, and contaminated pharmaceutical products, drugs, vaccines, and sera that are no longer required and need to be disposed of appropriately. As a result of increasing usage of pharmaceuticals, the accumulation of waste is gradually elevated which causes threat to humans and the environment.

Objectives: To critically analyse the pharmaceutical waste management (PWM) throughout the community, community pharmacies and hospitals in South Asian Association for Regional Cooperation (SAARC) region.

Methods: Research articles were collected and categorized on the stated objective from available sources (PubMed, Google Scholar) using comprehensive literature review. Most appropriate research articles in English from 2000 - 2020, were selected (10 articles from each area) using keywords such as PMW, hospital and community pharmacy waste.

Results: Awareness of World Health Organization recommendations on waste management methods and the impact on environment and health is very low. Most hospitals do not use basic self-protection equipment for handling and categorizing waste management while commonly use incineration for waste disposal since it is an environmentally friendly, affordable method. İn Nepal, they follow the take-back system against poor waste management methods. The awareness is low among the healthcare practitioners and most of the community pharmacists are unqualified and unskilled; thus, they follow unacceptable techniques, as hiding sharps, medicines and infectious waste in common waste, burning in open area, and flushing in the toilets. The unwanted, expired medicine accumulation is increasing and it leads to inappropriate waste management practices as the government influence is less favourable.

Conclusions: It needs to balance the poor awareness and practical knowledge with available regulations, low budget and government concerns as the PMW in SAARC region countries is challengeable. The institutional resource personnel can enhance knowledge, attitude to make qualified and skilled healthcare practitioners while government should establish proper guidelines, conduct awareness and training programmes and implement the 'take-back system' to improve the quality of PMW.

Keywords: *Community, Hospital, Pharmaceutical, Waste management*

PP 07

Association between Socio-Demographic Data and Usage of Skincare Products among Inhabitants in Kandy District, Sri Lanka

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Background: Skincare products are used by consumers for different purposes like cleansing, beautifying, promoting attractiveness or altering the appearance without affecting the body structure and function. Previous studies conducted in Galle and Anuradhapura districts by our research team indicated an association between the demographic data and the usage of skincare products.

Objectives: To identify the relationship between demographic data and usage of skincare products among inhabitants in Kandy district, Sri Lanka.

Methods: Data were collected from 250 participants who were residents of Kandy district for the past five years by using a pre-tested questionnaire and a google form. The participants were recruited from all 20 divisional secretariats of Kandy district. The convenience sampling technique was employed and data were analysed by descriptive statistics using SPSS version 20.0. A Chi-square test was used to determine the correlation between the socio-demographic data and the usage of skincare agents.

Results: The study population of 250 consisted of 166 (66.4%) females. The study population was categorized into five age groups and most (37.6%) were in the age group of 18-25 years. Almost all inhabitants had formal school education. İn this population, 52% were unmarried and 52.4% were unemployed. Interestingly, 62.4% of participants claimed that they were using skincare products such as moisturizers, fairness creams, anti-ageing creams, sunscreens, lip balms, antiwrinkle creams etc. Age group had statistically significant association with the usage of skincare products ($p<0.001$). Similarly, the levels of education and gender had statistically significant association with usage of skincare products ($p<0.001$). Although the employment status had statistically significant association with usage of skincare products ($p=0.022$), a statistically significant association between the marital status and the usage of skincare products ($p=0.12$) was not observed.

Conclusions: Similar to the results of the previous studies conducted in Galle and Anuradhapura districts, age group, levels of education, gender and employment status had a statistically association with the usage of skincare products. There was no statistically significant association between marital status and the usage of skincare products.

Keywords: *Kandy district, Popularity, Skincare products, Usage*

PP 08

Awareness of Breast Cancer and Breast Self-examination among Female Undergraduates in the University of Ruhuna, Sri Lanka: A Cross-sectional Study

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Background: Breast Cancer (BC) is the commonest cancer among females all over the world and in Sri Lanka. The regular Breast Self-Examination (BSE) is an important way to detect BC early. Then it is more likely to be treated successfully and increased survival.

Objectives: To assess the awareness of BC and BSE among female undergraduates in the University of Ruhuna, Sri Lanka.

Methods: A descriptive cross-sectional study was conducted by enrolling first year female undergraduates in eight faculties of University of Ruhuna. A convenient sampling method was used. A Google form-based questionnaire, developed from the previous studies was used to gather data on awareness of BC and BSE. Descriptive statistics were done using SPSS version 25.0.

Results: Out of the total of 260 undergraduates, 96.5% were Sinhalese and 98.8% were single. Most of the participants (99.2%) heard about BC. Electronic media was the most important source of information provider regarding BC. Awareness about the risk factors such as the past history of breast lump, family history of BC and older age were 65.8%, 61.9% and 29.2%. Of the total sample, approximately 86% of respondents identified, breast lump as an early sign of BC. Though 72.6% heard about BSE, only 27.7% have ever performed it. However, only 15.8% of the respondents correctly stated the appropriate age to practice the BSE as 'from 20 years'. The majority of the respondents (70.4%) have no idea about the time of performing BSE. Only 12.7% of the subjects correctly identified the main steps of BSE.

Conclusions: Though awareness of BC was high, performance of BSE was very low among the study population. Therefore, health education and awareness programmes for undergraduates are essential to enhance the knowledge on BC and BSE.

Keywords: *Awareness, Breast cancer, Breast self-examination, Female undergraduates, Sri Lanka*

PP 09

A Comparative Study between the Outcomes of Laparoscopic and Open Para Umbilical Hernia Repair at National Hospital Sri Lanka and Teaching Hospital Karapitiya

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Background: Para-umbilical hernia (PUH) repair has shown a progressive development over the time. It was initially performed by the open technique. With the introduction of new mesh types, laparoscopic para-umbilical hernia repair is gaining increasing acceptance.

Objectives: To compare the intra operative time, post-operative surgical site infection and duration of hospital stay of Laparoscopic with open PUH repair.

Methods: A retrospective study was conducted with 302 patients between 30 to 60 years including both males and females from National Hospital of Sri Lanka and Teaching Hospital Karapitiya. Of the participants, 150 patients have undergone Laparoscopic PUH repair and the rest have undergone open PUH repair. Intra operative time, post-operative surgical site infection and duration of hospital stay of the patients were recorded. All surgeries were performed by two experienced general surgeons and they have used both methods on similar number of patients. A 95% confidence interval was selected to compare with the mean differences of two samples. Critical value for 95% confidence interval with 149 degrees of freedom is 1.976.

Results: The mean (SD) operative times for open PUH repair and laparoscopic PUH repair were 46 ($\pm$3.1) and 25 ($\pm$2.9) minutes, respectively. Except one patient, others were discharged on post-operative second day following laparoscopic PUH repair, resulting the mean (SD) number of days of post-operative stay in hospital as 2.01 ($\pm$0.01) days. The post-operative stay of the open PUH repair group had a mean (SD) of 5.4 ($\pm$2.12) days. In comparison to four patients with post-operative surgical infections following open PUH repair, none of the laparoscopic PUH repair patients developed post-operative surgical site infections. There was a significant difference of the mean number of days of post-operative stay in hospital between two groups ($p<0.05$) and the mean operative time between two groups ($p<0.05$).

Conclusions: Laparoscopic repair has significantly better outcomes in-terms of intra operative time, post-operative complications and duration of hospital stay. Therefore, the laparoscopic PUH approach should be considered as a better strategy for para umbilical hernia repair than open PUH.

Keywords: *Hospital stay, Laparoscopy, Para-umbilical hernia repair, Surgical site infections*

PP 10

A Descriptive Cross-sectional Study of Practices Related to Usage of Skin Antiseptics among Healthcare Professionals in Sri Lanka

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Background: Skin is the largest organ in the body where microorganisms reside, potentially producing detrimental effects if introduced into the body through invasive medical procedures. Healthcare-associated infections due to poor hand hygiene have shown 19% prevalence in Sri Lanka. Therefore, proper asepsis is necessary to avoid infections before an invasive medical procedure.

Objectives: To assess practices on the use of skin antiseptics prior to an invasive medical procedure among healthcare professionals in all provinces of Sri Lanka.

Methods: A descriptive cross-sectional study was carried out among 210 healthcare professionals, including medical practitioners, surgeons, medical laboratory technicians and nurses from government and private hospitals and MOH offices. Data were collected using a pre-tested questionnaire in Google form. Data were analysed using descriptive statistics utilizing IBM SPSS version 25.0.

Results: Among the participants, 56.7% (n=119) were females, while the mean (SD) age was 40 (±13). The majority of participants, 87.1% (n=183), used 70% alcohol as a skin antiseptic regularly, while 40% (n=84) agreed that chlorhexidine was a better antiseptic than other antiseptics commonly used in Sri Lanka. The use of chlorhexidine was extremely low. The motive for selecting skin antiseptics was stated as both availability and requirement by 32.9% (n=69). When the characteristics of antiseptics were assessed, 34.8% (n=73) stated that chlorhexidine was active against a wide range of organisms, 87.1% (n=183) stated that 70% alcohol had the fastest onset of action, and 70.5% (n=148) of participants stated that povidone-iodine was active against a broad range of organisms. According to 76.2% (n=160) of participants, a doctor wearing a sterile gown and gloves showed antiseptic procedure used in Sri Lanka is adequate and up to standard.

Conclusions: This study highlights the need to improve the existing skin antiseptic procedures to further reduce the rate of surgical site infections and other socio-economic burdens caused by infections.

Keywords: *Antiseptics, Chlorhexidine, Ethyl alcohol, Healthcare professionals, Povidone-iodine*

PP 11

Physicochemical and Phytochemical Properties of the Amurthashtaka kwatha: An Ayurvedic Polyherbal Formulation

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Background: Amurthashtaka kwatha is an ayurvedic polyherbal formulation made up of eight plants, including bark of *Azadirachta indica*, seeds of *Holarrhena antidysenterica*, heart wood of *Santalum album*, stem of *Tinospora cordifolia*, whole plant of *Trichosanthes cucumerina* and rhizome of *Cyperus rotundus*, *Picrorhiza scrophulariiflora* and *Zingiber officinale*.

Objectives: To evaluate physicochemical and phytochemical properties of the Amurthashtaka kwatha.

Methods: The plant materials were purchased from three ayurvedic shops in Western Province, Sri Lanka and authenticated from Bandaranaike Memorial Ayurvedic Research Institute, Sri Lanka. Three separate kwatha preparations were done according to Ayurvedic pharmacy. One part of raw drugs, which represent equal quantities of eight plant parts were boiled with eight parts of water, and the final solution was reduced up to one-eighth. Phytochemical analysis of hot aqueous extracts of three separate preparations of kwatha from three Ayurvedic shops were performed as per standard protocols to detect phenolics, flavonoids, tannins, alkaloids, saponins, steroids, terpenoids, carbohydrates, proteins, phytosterols, and cardiac glycosides. Physicochemical analysis of each crushed Amurthashtaka kwatha powder was performed to determine total ash, acid-insoluble ash, water-soluble ash, moisture content, and extractable matters.

Results: According to the phytochemical analysis, all tested phytoconstituents (phenolics, flavonoids, tannins, alkaloids, saponins, steroids, terpenoids, carbohydrates, proteins, phytosterols and cardiac glycosides) were identified in each preparation of kwatha. The mean percentage (SD) values of three samples were 8.27 ($\pm$0.47) for total ash, 3.09 ($\pm$0.34) for water-soluble ash and 2.58 ($\pm$0.73) for acid-insoluble ash. The mean values of three samples of kwatha were obtained as water-soluble 2.94 ($\pm$0.28), ethanol-soluble 2.70% ($\pm$0.07) and dichloromethane-soluble 2.24 ($\pm$0.30). According to the moisture analyser method, the mean value of moisture content was 10.77 ($\pm$0.67).

Conclusions: Physicochemical and phytochemical characteristics identified in the present study will be used as standard parameters for the identification and quality control of the kwatha.

Keywords: Amurthashtaka kwatha, Decoction, Physicochemical, Phytochemical, Polyherbal

PP 12

Socio-demographic Characteristics of Adolescent Pregnant Women in the Galle District: A Hospital-based Descriptive Cross-sectional Study

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Background: Adolescence is defined as the age between 10 to 19 years. Adolescent pregnancies are a global problem with unfavourable health, social and economic consequences and it has a higher maternal mortality and morbidity. Therefore, preventing adolescent pregnancy is very important. In Sri Lanka rate of adolescent pregnancy is 4.4% in both 2018 and 2019.

Objectives: To identify the socio-demographic characteristics of adolescent pregnant women in the Galle district.

Methods: A hospital based descriptive cross-sectional study was conducted in antenatal clinics of four main hospitals in the Galle district: Teaching Hospital (Mahamodara) and Base Hospitals (Balapitiya, Udugama, Elpitiya). The study sample comprised of 252 adolescent pregnant women, and their socio-demographic data were collected by using an interviewer-administered questionnaire.

Results: The mean age of the study participants was 18.2 years and the majority were in the age group of 19-20 years (n=109, 43.2%). Most of the participants were married (n=199, 78.9%) and living in rural areas (n=184, 73%). The majority of participants studied up to O/L (56.7%, n=143) and 92.9% (n=234) of them were unemployed. Fathers in the majority (n=157, 68.8%) of the families were labourers whereas 119 (49.0%) mothers were unemployed. Majority of partners of the study participants were between 20-23 years (n=125, 49.6%) and studied up to O/L (n=147, 58.3%). The duration of relationship of majority of couples (n=141, 56%) was less than eight months. Age at first sex of the majority (n=166, 65.9%) of the participants was 16 to 18 years and 178 (69.5%) of pregnancies were unplanned and 134 (53.2%) were unwanted.

Conclusions: Low levels of education, being in a rural community and poverty were some of the factors which may contributed to adolescent pregnancies. Unplanned and unwanted pregnancies following a short duration of relationship with partners highlighted the importance of having proper education on sexual and reproductive health during early adolescent period.

Keywords: Adolescent pregnancy, Galle district, Socio-demographic characteristics

PP 13

Reasons for Delayed Presentation in Patients with Oral Cancer to the Teaching Hospital Karapitiya

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Background: Oral cancer is one of the leading malignancies among males in Sri Lanka and the most common cause of death. Early detection/diagnosis, treatment and management are vital to reduce morbidity and mortality among patients with oral cancer and improve the Quality of Life (QoL).

Objectives: To identify the reasons for delayed presentation of oral cancer to the oral and maxillofacial clinic (OMC), Teaching Hospital Karapitiya (THK), Sri Lanka, and possible patient-associated factors for the delayed presentation.

Methods: A hospital-based descriptive cross-sectional study was conducted incorporating 106 patients with oral cancer. A self-designed, pre-tested, interviewer-administered questionnaire was used to collect socio-demographic and clinical variables. The delayed presentation has been considered if the patient had taken more than three months to visit a healthcare practitioner. Data were analysed using SPSS version 20.0. Chi-square test was used to find out associations of the selected socio-demographic and clinical variables. At the time of diagnosis, stages I and II were considered as 'early stage' and stages III and IV were considered as 'advanced stage'.

Results: The mean (SD) age of the sample was 55.03 ($\pm$12.84) years. Majority of the patients (69%) met the healthcare practitioner within three months; the mean (SD) time duration for the first visit was 4.6 ($\pm$2.35) weeks. Among patients who delayed presentation (31% of the sample), 61% of patients were diagnosed with advanced stage of oral cancer. The delayed presentation was significantly influenced by level of education (p=0.027). However, no significant association was found with respect to age, gender, monthly income, and health-related habits like betel chewing, drinking alcohol, and smoking.

Conclusions: The delayed presentation of oral cancer is significantly associated with level of education. The advanced stage of oral cancers had increased due to the delay of presentation. An awareness session on cancer-specific knowledge for oral cancer patients is recommended to minimize the delayed presentation. This would be more important to increase the QoL of patients with oral cancer and reduce the cancer care burden of the country.

Keywords: *Associated factors, Delayed presentation, Oral cancer, Reasons, Sri Lanka*

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PP 14

In-vitro Investigations on Antioxidant and Anti-diabetic Activities of Selected Medicinal Plants in Sri Lanka

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Background: Scientific investigations of biological activities of plant extracts are important to develop formulations for diabetes mellitus as it is a major health concern in the world. Therefore, it is beneficial to investigate the antioxidant and anti-diabetic activities of medicinal plants which were less evaluated for their anti-diabetic activities.

Objectives: To evaluate *in-vitro* antioxidant activities, Total Phenolic Content (TPC) and anti-diabetic activities of the fruits of *Garcinia* sp. and *Bunchosia armeniaca*, leaves of *Plectranthus zatarhendi*, roots of *Hibiscus furcatus* and seeds of *Gossypium* sp.

Methods: Plant parts which were collected from the field or from grown pots in Sri Lanka were forwarded for plant authentication at the National Herbarium, Peradeniya Botanical Gardens, Sri Lanka. Series of different concentrations of aqueous (AE) and 1:1 dichloromethane: methanol [organic (OE)] extracts of plants were subjected to estimation of TPC using Folin-Ciocalteu reagent method, antioxidant activity by 2,2-diphenyl-1-picrylhydrazyl (DPPH) assay, carbohydrate digesting enzyme inhibitory activity assays. Data were analysed using GraphPad prism 8.4.2. (679) version software and results were expressed as simple descriptive statistics.

Results: *Garcinia* sp. OE showed the highest DPPH inhibition (IC$_{50}$, 0.12±0.0 mg/mL) followed by AE of *P. zatarhendi* and OE of *P. zatarhendi*. The highest TPC was found in the AE of *P. zatarhendi* (2.43 mg GAE/g) followed by OE of *P. zatarhendi* and OE of *Garcinia* sp. OE of *Garcinia* sp. showed the highest α-amylase and α-glucosidase enzymes inhibitory activities with IC$_{50}$, 1.99±0.0 mg/mL and, 1.76±0.0 mg/mL, respectively. All other selected plant extracts showed less carbohydrate digesting enzyme inhibitory activities (IC$_{50}$>5 mg/mL). The acarbose showed IC$_{50}$, 0.19±0.0 mg/mL and 0.01±0.0 μg/mL against α-amylase and α-glucosidase enzymes, respectively.

Conclusions: It is concluded that the OE extracts of *Garcinia* sp. showed the highest *in-vitro* antioxidant and anti-diabetic activities. However, the highest TPC was observed with the AE of *P. zatarhendi.*

Keywords: Anti-diabetic, Antioxidant, Garcinia sp., Total Phenolic Content

PP 15

Association between Body Mass Index and Degree of Disability in Patients with Chronic Low Back Pain: A Cross-sectional Study

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Background: Low back pain (LBP) is a common disorder, which contributes greatly to the degree of disability (DoD). Body Mass Index (BMI) has been identified as a significant contributory factor for LBP. Understanding the association between BMI and DoD among patients with chronic LBP is important to promote the maintenance of a healthy and active lifestyle.

Objectives: To determine the association between BMI and DoD in patients with chronic LBP in Sri Lanka.

Methods: A descriptive cross-sectional study was conducted in selected teaching hospitals in Sri Lanka under the convenience sampling method including chronic LBP patients who fulfilled the inclusion and exclusion criteria. Demographic characteristics including age, gender, and duration of back pain of the participants were collected using a self-administrated questionnaire. The BMI was calculated. The Oswestry Disability Index (ODI) values were used to interpret the DoD of chronic LBP patients. Data were analysed using SPSS version 20.0.

Results: The study included 212 participants comprised of 58.5% females and 41.5% males within the age range of 20-60 years. The mean values of age, BMI, ODI, DoD and duration of LBP were 45.9 ($\pm$11.4) years, 24.8 ($\pm$3.9) kgm^{-2}, 18.0 ($\pm$6.0), 36.1 ($\pm$12.2) % and 3.3 ($\pm$4.4) years, respectively. A significant association was obtained between BMI and degree of disability ($p<0.01$; $r=0.22$). According to the DoD values of the study population, 10.8% patients had minimal disability and 60.4% patients had moderate disability while 28.8% patients had severe disability.

Conclusions: The study concluded that the DoD associated with the BMI among chronic LBP patients in Sri Lanka. Offering lifestyle modifications to normalize the BMI values could be important to reduce the DoD in chronic LBP patients.

Keywords: *Body Mass Index, Chronic low back pain, Oswestry Disability Index*

PP 16

Antacid Properties of Acidic and Basic Aqueous Extracts Obtained from Vishnukranthi (*Evolvulus alsinoides* (L.) L.) Plant

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Background: The perinneal herb, *Evolvulus alsinoides* is commonly known as Vishnukranthi (Sinhala), Dwarf morning glory (English), Vishnukarandi (Tamil) and Shankpushpi (Sanskrit). This plant with blue flowers is known for its ethnomedicinal uses in fever, asthma, dysentery and bowel complaints. The antacid activity of aqueous, ethanolic and hexane extracts of *E. alsinoides* have been evaluated in our previous study.

Objectives: To evaluate the antacid activity of the aqueous extracts of whole plant of *E. alsinoides* obtained under acidic and basic conditions.

Methods: Whole plant parts of *E. alsinoides* were extracted using distilled water acidified using hydrochloric acid (pH 4) and basified with ammonia solution (pH 10) by reflux method for four hours. Obtained extracts were concentrated using rotary evaporator, before freeze-drying. Solutions of acidic (AaqE) and basic (BaqE) aqueous extracts at a concentration of 0.05 g/mL were prepared using distilled water. The neutralizing capacity and the duration of consistent neutralizing activity were determined with modified Fordtran's titration method and Vatier's artificial stomach model. An aliquot of 10 mL sample was used for each test and all experiments were triplicated. A commercially available antacid preparation and distilled water were used as the reference and the negative control, respectively.

Results: The antacid capacity (volume of 0.1N H^+ consumed) of AaqE and BaqE were 7.9 ($\pm$0.17) and 19.1 ($\pm$0.06) mL, respectively which were significant ($p<0.001$) compared to the negative control. The durations of consistency of the antacid action were 93.08 ($\pm$1.31) s ($p<0.05$) and 278.62 ($\pm$8.84) s ($p<0.001$), respectively. Both AaqE and BaqE of *E. alsinoides* exhibited statistically significant antacid activity in both models compared to the negative control. However, the extracts were less potent ($p>0.05$), when compared to the reference antacid preparation.

Conclusions: Basic pH of the extraction medium may influence the antacid activity of the aqueous extract of *E. alsinoides*.

Keywords: *Fordtran's titration, Gastroprotective, Vatier's artificial stomach model, Vishnukranthi*

PP 17

Performance-based and Self-reported Physical Functions and Associated Co-morbidities among Community-dwelling Older People in Embilipitiya MOH Area

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Background: Physical Functions (PF) in performance based and self-reported ways are essential parameters for health assessment in older people that can be further influenced by co-morbidity.

Objectives: To assess the level of self-reported PF (SRPF) and performance-based PF (PBPF) and associated co-morbidities among community-dwelling older people in Embilipitiya Medical Officer of Health (MOH) area.

Methods: A descriptive cross-sectional study was conducted with randomly selected community-dwelling older people (n=200) aged 65-80 years living in Embilipitiya MOH area. Short Physical Performance Battery (SPPB) was used to study PBPF while SRPF was studied using 10-items of PF in short-form 36 survey. Co-morbidities were assessed by using clinical diagnosis mentioned in the medical records. The cut-off values of SRPF were <33=poor function, 34-66=moderate function and >67=full function while cut-off values of SPPB were <10=worst performance and >10=best performance. The data were analysed using descriptive statistics and Chi-square test.

Results: Of the participants, 50.5% were females and a majority (70.0%) were in age category of 65-70 years. Based on the PBPF, 32.5% (n=65) had worst performance and 67.5% (n=135) had best performance. With regards to the SRPF, 28.5% (n=57) had poor function, 49.0% (n=98) had moderate level of function and 22.5% (n=45) reported the full function. Having diabetes mellitus (p=0.004) and malignancies (p=0.006) has shown significant associations with PBPF. Further, diabetes mellitus (p=0.02), asthma (p=0.02), anaemia (p<0.001) and osteoarthritis (p=0.02) have shown significant associations with SRPF.

Conclusions: Despites the way of measurement of PF, a reasonable percentage of older people living in the studied area had poor PF. Further, co-morbidities are influenced on SRPF and PBPF the tested population.

Keywords: Co-morbidities, Older people, Performance based, Physical function, Self-reported

PP 18

Factors Affecting Consumer Preference on Mobile Specimen Collection Service in the Kandy Municipal Area: A Cross-sectional Study

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Background: The mobile specimen collection service (MSCS) is a well-established healthcare service worldwide. Although this service is well established, most of the people in Sri Lanka still visit the laboratory to fulfil the requirement of their diagnostic tests. A thorough literature review revealed six factors that influenced consumer preference on MSCS, including socio-demographic factors, knowledge and awareness, perceived usefulness, security, price, and health condition.

Objectives: To assess the factors affecting consumer preference on MSCS among the people in the Kandy Municipal Area (KMA).

Methods: A cross-sectional study was performed using conveniently selected 30 participants as a pre-test to validate the study and the main study was carried out among conveniently selected 216 participants in the KMA. A self-administered questionnaire was given to study participants and the reliability was checked using Cronbach's alpha analysis. Descriptive variables were expressed as frequencies and percentages. Pearson chi-square test and the independent sample t-test were used to assess the factors affecting MSCS.

Results: There was a significant difference between the participants' employment and their consumer preference, $[\chi^2(3, n=133)=12.485, p=0.006]$. Furthermore, results revealed that most of the public sector employees use MSCS (62.5%). When assessing the factors affecting consumer preference for MSCS, the perceived usefulness ($p<0.001$) and the perceived security of the service ($p<0.001$) showed a significant difference in consumer preference for MSCS. In addition, results revealed a significant difference between the perceived health condition of the patient and consumer preference on MSCS, $[\chi^2(2, n=133)=7.669, p=0.021]$.

Conclusions: Employment status, perceived usefulness, security of the service, and the patient's health condition are the main factors affecting consumer preference on MSCS. Therefore, those factors are recommended to address while implicating MSCS for the Sri Lankan community.

Keywords: Consumer behaviour, Kandy municipal area, Medical laboratory services, Mobile specimen collection service, Self-administered questionnaire

PP 19

The Secondary Metabolites in Medicinal Plants with Potential Anti-ulcer Activity and Their Mechanism of Actions: An Overview

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Background: Gastritis is an inflammation, irritation or erosion of the lining of the stomach with the formation of lesions in the gastrointestinal mucosa. Conventional drugs such as proton pump inhibitors, histamine receptor blockers, synthetic prostaglandin, antacids, antibiotics are used to treat peptic ulcers. Since these treatments are reported with undesirable side effects such as gastrointestinal and hepatic toxicities, renal, cardiovascular effects, and hematopoietic effects, use of medicinal plants with anti-ulcer activity is frequently practiced in the traditional medicine due to the less side effects and high recurrence rate after completion of the treatments.

Objectives: To report the available data on potential anti-ulcer active secondary metabolites and their mechanism of actions in some selected medicinal plants.

Methods: The literature was collected from search engines of ScienceDirect, PubMed, Springer, and Google Scholar using the key words.

Results: It is reported that secondary metabolites such as alkaloids, flavonoids, tannins, terpenoids, saponins, glycosides, gums and mucilage present in medicinal plants such as *Cucumis sativus L., Ocimum basilicum, Aloe vera, Cyclea peltata (Lam) Hook. f. Thoms, Aegle marmelos, Hibiscus rosa-sinensis, Centella asiatica, Moringa oleifera, Zingiber officinale, Lagenaria siceraria, Morus alba Linn., Mangifera indica, Terminalia chebula, Anacardium occidentale*, and *Phyllanthus embilica L.,* play a major role in antiulcer activity via several mechanisms. Alkaloids inhibit gastric acid secretion while increasing blood flow, nitric oxide synthesis, mucus production, bicarbonate secretion and prostaglandin. In addition, alkaloids prevent apoptosis and oxidative injury. Flavonoids increase the mucosal prostaglandin content, decrease of histamine secretion, exhibit anti-*Helicobacter pylori* activity and antioxidant activity with increased superoxide dismutase, catalase, and glutathione enzymes. Certain saponins activate mucus membrane protective factors, inhibit gastric acid and pepsinogen secretion, and increase blood flow. Tannins inhibit the peptic activity of gastric juice. Gums and mucilage cover and protect the mucosa of the stomach and thereby help to prevent gastric ulcers.

Conclusions: It is deliberated to sum-up that secondary metabolites in the selected medicinal plants which are used in the treatment of peptic ulcer disease and their mechanism of actions have exhibited gastroprotective properties.

Keywords: *Gastritis, Medicinal plants, Peptic ulcer disease, Phytochemicals, Secondary metabolites*

PP 20

Knowledge on Safety Measures Regarding Hospital Acquired Infections among Sanitary Workers at the Teaching Hospital, Karapitiya

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Background: Hospital-acquired infections (HAIs) are a primary health concern in the hospital sector. HAIs are a significant cause of morbidity and mortality around the world. Hospital sanitary workers are a high-risk group who can be exposed to HAIs at work. The knowledge regarding HAIs is essential for preventing and reducing the prevalence of HAIs.

Objectives: To assess the knowledge on prevention and safety measures of HAIs among sanitary workers at Teaching Hospital Karapitiya (THK) and to identify the affecting factors associated with the knowledge.

Methods: A descriptive cross-sectional study was conducted in THK selecting a convenient sample of 102 sanitary workers. Data were collected using a pre-tested, interviewer-administered questionnaire with five-point Likert scale designed based on the literature. It included nine questions to assess knowledge on prevention and safety measures of HAIs. Data analysis was done with Chi-square test using SPSS version 25.0.

Results: Majority (n=78, 76.5%) of the participants were males. The age range distributes from 23 to 72 years with a mean (SD) age of 49 ($\pm$10.4). Most of sanitary workers (n=61, 59.8%) were 55-64 years old. About 53.5% (n=55) workers had less than 3 years of work experience. The mean (SD) knowledge was 29.37 ($\pm$6.43). Majority (n=84, 82.4%) had a good level of knowledge about HAIs while 17.6 % (n=18) had poor knowledge. Only the work experience (p=0.03), associated with the level of knowledge while age (p=0.12), education level (p=0.67), gender (p=0.09) and marital status (p=0.52) had no such associations.

Conclusions: This study identified majority of sanitary workers in THK had good knowledge on prevention and safety measures of HAIs which is associated with the work experience.

Keywords: Hospital-acquired infections, Knowledge, Sanitary workers

PP 21

Determination of the Effectiveness of Selected Disinfectants Available in a Medical Laboratory Setting

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Background: Sterilization is a process that kills all forms of microbial life using physical or chemical sterilization methods. As the gold standard method for physical sterilization, autoclaving is used in medical laboratory setup. It is reported that disinfectants can be used when autoclaving is not possible.

Objectives: To determine the effectiveness of selected disinfectants in a medical laboratory setting.

Methods: Different concentration gradients of three disinfectants namely, glutaraldehyde (0.75%-2%), sodium hypochlorite (0.5%-1.75%), and lysol (0.5%-10%) were prepared and tested against standard cultures of *Staphylococcus aureus* (ATCC 25923)*, Escherichia coli* (ATCC 25922)*, Pseudomonas aeruginosa* (ATCC 27853) and *Bacillus subtilis* (ATCC 6633). A constant inoculum of each organism (1.5×10^8 CFU/mL) was allowed to interact with each disinfectant concentrations, at different time intervals from 3 to 16 hours. Minimum Inhibitory Concentration (MIC) of each disinfectant at different time period was recorded by observing the turbidity of each well using microtiter plate method. To investigate Minimal Bactericidal Concentration (MBC), same volume from each well of the above (from 3 to 16 hours) microtiter plates was sub-cultured on Muller Hinton Agar at 37ºC for 24 hours and recorded whether the standard organisms were grown or not.

Results: *S. aureus*, *E. coli* and *B. subtilis* were destroyed by all the selected concentrations of glutaraldehyde and lysol in 3 hours. However, they were destroyed by sodium hypochlorite in 8 hours at the selected concentrations. *P. aeruginosa* was effectively destroyed by all the concentrations of glutaraldehyde in 3 hours, and 2.5% of lysol was effective in killing it in 3 hours. None of the selected concentrations of sodium hypochlorite at 16 hours were able to destroy *P. aeruginosa.*

Conclusions: The most effective chemical sterilant is 0.75% glutaraldehyde whereas 2.5% lysol is the best alternative to glutaraldehyde that can be used in medical laboratory setup. Although sodium hypochlorite is an effective chemical sterilant for *S. aureus, E. coli* and *B. subtilis*, it is not an effective sterilant for *P. aeruginosa*. These concentrations of each disinfectant will work for that particular inoculum.

Keywords: *Disinfectants, Effectiveness, MBC, MIC, Sterilization*

PP 22

Bacteriological Profile of Chronic Foot Ulcers in Diabetic Patients at Teaching Hospital Karapitiya

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Background: Diabetes is a leading non-communicable disease in the world. Diabetic foot ulcers are one of the most common devastating complications in diabetic patients. Diabetic foot ulcers are predominantly caused by multidrug resistant (MDR) polymicrobial flora. Biofilm formation is an important pathophysiology in diabetic foot ulcers.

Objectives: To determine the types of bacteria, antibiotic sensitivity patterns of bacteria, isolated from chronic foot ulcers in diabetic patients at Teaching Hospital Karapitiya.

Methods: A prospective cross-sectional study was performed using convenient sampling method. Deep wound swabs were collected from 50 diabetic patients with chronic foot ulcers. All the samples were processed according to the Clinical and Laboratory Standards Institute guidelines and antibiotic sensitivity test was carried out using the disc diffusion method. MDR clinical isolates were subjected for the detection of biofilm formation using tissue culture plate method. Data were statistically analysed using SPSS version 25.0.

Results: A total of 76 bacterial isolates were obtained from 50 patients with chronic diabetic foot ulcers. The age group ranged from 38 to 80 years. Most of the cases were polymicrobial (58.0%). Majority of isolated pathogens were Gram negative bacilli (53.9%). Most commonly isolated pathogens were *Staphylococcus aureus* (28.9%) followed by *Proteus spp.* (19.7%), *Pseudomonas spp*. (18.5%), *Acinetobacter* (11.9%), Coagulase negative *Staphylococci* (7.9%), *Diphtheroid* (6.6%), *Escherichia coli* (3.9%) and *Enterococci spp.* (2.6%). Out of the isolates, 32 (42.1%) had multidrug resistance and among them 14 isolates (43.8%) expressed biofilm formation. Biofilm formation has a significant relationship with isolation of MDR organisms (*p*<0.05).

Conclusions: Polymicrobial infections due to Gram negative organisms were the commonest in chronic diabetic foot ulcers. *S. aureus* was the predominantly isolated organism. Biofilm formation had a significant relationship with the isolation of MDR organisms from diabetic foot ulcers. As significant number of MDR cases were isolated, knowledge on the antibiotic susceptibility pattern of the isolates from diabetic foot infections is vital to design new treatment patterns.

Keywords: Biofilm formation, Diabetic foot ulcers, Multidrug resistance

PP 23

Study of *In-vitro* Antiurolithiatic and Lithotriptic Activities of *Crateva adansonii*

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Background: Urolithiasis clinically stands for the formation and movement of stones in the urinary system and it is one of the most common urinary diseases in the world. The plant; *Crateva adansonii* (Garlic pear tree; Lunuwarana) is used as a traditional remedy for the treatment of urolithiasis.

Objectives: To evaluate *in-vitro* antiurolithiatic and lithotriptic activities of the aqueous stem bark extract of *C. adansonii.*

Methods: Plant extract was prepared by decoction method. Different concentrations of plant extract were mixed with artificial and natural urine. An aliquot of 15 mmol/L $CaCl_2$ solution followed by 20 mmol/L $Na_2C_2O_4$ solution were added while maintaining the pH of the medium at 6.5. Antiurolithiatic activity was examined by measuring the optical density of these mixtures at 620 nm followed by calculation of percentage inhibition of nucleation. The investigation of the lithotriptic activity was carried out with a redox titration using $KMnO_4$ with CaC_2O_4. The percentage of dissolution of calcium oxalate crystals was calculated. Cystone tablets were used as the reference drug.

Results: Results of the spectrophotometric method showed concentration dependant increase in the inhibitory activity of nucleation in both urine media. Plant *C. adansonii* showed the highest mean percentage of nucleation inhibition with a value of 50.82% at the highest concentration of 20 mg/mL in natural urine, whereas Cystone showed 47.08%. In artificial urine, plant extract at the concentration of 20 mg/mL showed a mean percentage inhibition value of 51.90% which is also higher than the reference drug: Cystone (47.47%). The results of lithotriptic activity demonstrated that the aqueous extract of *C. adansonii* was less effective in dissolving CaC_2O_4 crystals in both natural and artificial urine (25.03%, 24.68%), respectively compared to Cystone (36.91%, 35.17%).

Conclusions: The aqueous extract of *C. adansonii* bark exhibits higher antiurolithiatic activity on CaC_2O_4 crystals formation and shows moderate lithotriptic activity in both natural and artificial urine.

Keywords: Antiurolithiatic, Calcium oxalate, Crateva adansonii, Cystone, Lithotriptic

PP 24

Effect of Temperature on Cysteine Inhibitory Activity of Seed Extracts of *Vigna unguiculate* (Cowpea) Sri Lankan Breeds

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Background: Disturbances in regulation of cysteine activity may leads to severe disease conditions such as cancers, neurodegenerative disorders and cardiovascular diseases. Therefore, the discovery of natural cysteine inhibitors paved the way to a novel therapeutic strategy against such diseases.

Objectives: To investigate the cysteine inhibitory activity (CIA) of seed extracts of two local breeds of *Vigna unguiculate* (cowpea) and the effect of temperature on CIA.

Methods: Seeds of two local breeds known as Dahawala and Bombay were collected from the Field Crops Research and Development Institute of Sri Lanka. A concentration gradient (1.25, 2.5, 5, 10, and 20, % w/v) of aqueous seed extracts was screened for CIA. The seed extracts were incubated with L-cysteine in phosphoric acid buffer (pH 7.5) and then the casein was added as the substrate. Following the incubation at 37⁰C, trichloroacetic acid was added. The absorbance of the supernatant was recorded at 280 nm and percentage cysteine inhibitory activity (CIA%) was calculated. The thermal stability of the inhibitors was studied by pre-incubation of seed sample in different temperatures following evaluation of CIA.

Results: Among the concentrations screened, the maximum CIA% was exhibited by 10% seed extracts of both breeds [Bombay, 67.5 (±0.01%); Dahawala, 65.5 (±0.03%)]. Hence, 10% extract was assessed for thermal stability. Dahawala seed extract demonstrated its maximum CIA% at 37⁰C [69.52 (±0.03%)], while it was 39.44 (±0.07%) at 60⁰C. The extract did not exert any activity beyond 80⁰C. Bombay seeds extract showed the optimum CIA% at 37⁰C [65.27 (±0.06%)], while the inhibitory activity at 60, 80 and 100⁰C were 32.63 (±0.02%), 26.60 (±0.08%) and 18.03 (±0.01%), respectively.

Conclusions: The results revealed that, the seed extracts of both breeds contain a considerable amount of cysteine inhibitors. The inhibitors present in Dahawala seeds are heat-labile, while the inhibitors in Bombay seeds are heat stable as they demonstrated a considerable activity even at high temperatures.

Keywords: Cysteine inhibitors, Legumes, Proteases, Vigna unguiculate

PP 25

Psychological Distress related to Acne among Young Adults who are Attending to the Dermatologic Clinic at the National Hospital of Sri Lanka

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Background: Acne is a common visible skin disease affecting a considerable percentage of the world population with the highest prevalence in the younger generation. It is known to cause a significant psychological impact including anxiety, depression, and stress in adolescents and young adults.

Objectives: To assess the psychological distress related to acne among young adults who attend the dermatologic clinic at the National Hospital of Sri Lanka (NHSL).

Methods: A descriptive cross-sectional study was conducted among conveniently selected 113 patients (young adults, 18-35 years), attended the dermatology clinic at NHSL to seek treatments for acne problems. The questionnaire was converted to a google form and the link to the questionnaire was circulated among the participants using social media platforms. Depression, Anxiety, Stress Scale (DASS 21) which was validated for Sri Lankan context, was used to measure the psychological distress of the participants. Descriptive statistics were used to analyse data using SPSS version 25.0.

Results: Among the participants, 70.8% belonged to the 27-30 years age category, 79.6% were females and 49.6% were unmarried. Most of them were employed (74.3%) and nearly half of the participants (54.0%) were educated up to GCE A/L. The majority of them (75.2%) were diagnosed with acne 5 years ago. Pimples (pustules) appeared on the face of 85.8% of the participants. Among the participants 85.0% reported normal, 10.6% mild, 3.5% moderate and 0.9% severe depression. Normal, mild, moderate, severe, and most severe anxiety levels among the participants were 67.2%, 12.4%, 11.5%, 6.2%, and 2.7%, respectively. Among the participants 92.0% had normal, 7.1% mild and 0.9% moderate stress levels.

Conclusions: The findings of the study revealed a considerable psychological influence including anxiety, depression, and stress related to acne among young adults who attend the dermatologic clinic at NHSL. Early and effective interventions are necessary to manage patients with acne who suffer from phycological impairments.

Keywords: Acne, Anxiety, Depression, Stress, Young adults

PP 26

Help Seeking Attitude for Depression among Nursing Undergraduates in a Private Education Institute in Gampaha District, Sri Lanka

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Background: Depression is a psychological problem which affects undergraduates. Studies have shown that nursing undergraduates are more prone to have depression due to clinical training, academic workload, and night shifts.

Objectives: To study the attitudes of help seeking for depression among nursing undergraduates in a private institute in Gampaha district.

Methods: A cross-sectional study was conducted at International Institute of Health Science, Welisara, a private educational institution, in Gampaha district by recruiting 151 nursing undergraduates. A vignette describing a peer suffering from depression was presented and participants were given a questionnaire based on the case vignette, constructed according to Amarasuriya, et al., 2018. Attitude towards seeking help for depressions was evaluated using the response given for vignette.

Results: The participants were between 18 to 28 years of age and among them 68.2% (n=103) were females. The majority (70%, n=106) of the participants were willing to reach professional help rather than informal help for the issue depicted in the case vignette. Respondents who preferred to get help from a psychologist and counsellor were 62.7% (n=95) and 73.3% (n=111), respectively. A fewer number of participants preferred to seek help informally through parents (48%, n=72) and from friends (34.7%, n=52). However, 5.3% (n=8) reported they are reluctant to communicate the problem with anyone if they ever suffered from depression while a majority (94.7%, n=143) preferred to share the problems and seek necessary help.

Conclusions: Nursing undergraduates of the sample intended to communicate regarding problems and willing to seek professional psychological help. The participants have a positive attitude towards seeking help for depression.

Keywords: Attitudes, Depression, Help seeking, Psychological, Vignette

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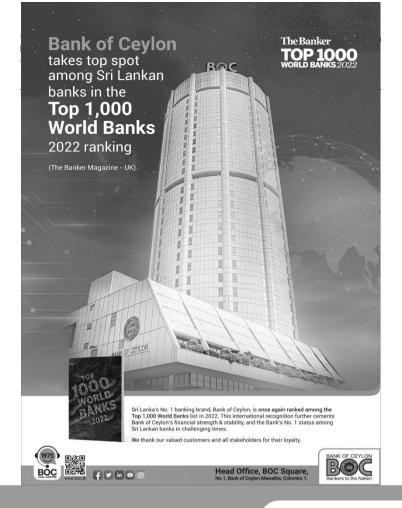Proceedings of the 5th Research Symposium of the Faculty of Allied Health Sciences
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