



**PROCEEDINGS OF  
2<sup>ND</sup> UNDERGRADUATE RESEARCH  
SYMPOSIUM  
FACULTY OF MEDICINE AND  
ALLIED SCIENCES  
RAJARATA UNIVERSITY  
OF SRI LANKA**

**19<sup>th</sup> July 2019**

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Proceedings of 2<sup>nd</sup> Undergraduate Research Symposium of Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka

July 2019

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## **Message from the Vice Chancellor Rajarata University of Sri Lanka**



Universities play an important role in creating and spreading knowledge. To create knowledge research is a must. I believe that research and teaching are closely interconnected and reinforce each other. Therefore, the Rajarata University students should be educated in a research-informed environment.

I am glad to hear about the 2nd undergraduate Research Symposium of Faculty of Medicine and Allied Sciences. 32 research groups are planning to present their findings at this Symposium which is to be held on the 19th July. I congratulate the organizing committee of the symposium and convey my best wishes to all those junior researchers of Faculty of Medicine and Allied Sciences.

Dr B.A. Karunaratne  
BSc, MSc, PhD  
Vice Chancellor  
Rajarata University of Sri Lanka



## **Message from the Dean Faculty of Medicine and Allied Sciences**



Research is an essential skill of a doctor in the 21st century. The clinician researchers are hard to find even in the developed world and they are highly valued for their contribution to improved patient care.

Despite being one of the youngest medical faculties in the country, we have already included research as an integral part of the undergraduate medical curriculum and have successfully conducted the First Undergraduate Research Symposium last year.

This year, the Faculty of Medicine and Allied Science, Rajarata University of Sri Lanka conducts the Second Undergraduate Research Symposium. I wish to thank students, supervisors, academic staff of the Community Medicine Department and all other non-academic staff members who strived to make this event a success.

I wish all the students who genuinely carried out their research a successful future!

Prof Sisira Siribaddana  
MBBS, MD, FCCP, FRCP Edin  
Dean  
Faculty of Medicine and Allied Sciences  
Rajarata University of Sri Lanka



## **Message from the Head Department of Community Medicine**



The importance and compulsoriness of integrating scientific research training into undergraduate medical curriculum is widely emphasized across the globe. The research process not only allows students to build up their scientific research knowledge, but also contributes to develop higher order research competencies such as critical-thinking, problem-solving and life-long learning.

Hence, in line with the global trends in medical education, the Faculty of Medicine And Allied Sciences (FMAS), Rajarata University of Sri Lanka (RUSL) has introduced the ‘Research in Medicine’ module early in the undergraduate medical curriculum.

As the Head, Department of Community Medicine and as the Module Co-ordinator of the ‘Research in Medicine’ module, it is indeed a great pleasure to witness the fruitful results of the hard work of all the undergraduates, who have conducted research in a wide spectrum of important health related topics.

I would like to congratulate all 32 research groups, whose research findings will be featured in the Second Undergraduate Research Symposium of FMAS, RUSL and also would like to thank all academic supervisors for their invaluable guidance throughout the period.

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# **Abstracts of Poster Presentations**

## **Isolation of *Malassezia spp.* Causing Dandruff in Medical Students and In vitro Anti-fungal Effect of ‘Antidandruff’ Shampoos and Crude Extracts of Herbs**

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**Background:** Dandruff is a scalp disorder, characterized by itching, and rapid turnover of the outer layer of skin of scalp of a person. Yeasts of genus *Malassezia* are responsible for dandruff.

**Objective/s:** The objectives were to ascertain the prevalence, to describe associated factors, to isolate the *Malassezia* genus from dandruff samples of medical students and to test the anti-fungal effects of commercially available shampoos and crude extracts of commonly used herbs against *Malassezia*.

**Method:** Among the population of third year medical students of FMAS, 95 students were chosen by systematic sampling. A self-administered questionnaire was used for data collection. A sample of skin flakes was collected from participants with visible skin flakes. Specimens were observed with 4 direct microscopic methods. Fungal colonies isolated in Saborauds/Dixon Agar were tested with catalase test and Gram’s staining. Antifungal activity of six shampoo brands and crude extracts of eleven herbs were tested against isolated *Malassezia spp.* by agar well diffusion method.

**Results:** Prevalence of dandruff was 63.2%(65/95) (Males 52.9%). The typical ‘Spaghetti and Meatball’ appearance was seen in 80%(52/65) of skin flakes. Of those samples, *Malassezia spp.* could be isolated only from 86%(45/52). *In-vitro*, anti-malassezia effect (Inhibition zone (IZ)>10mm) was observed in 4/6 of the tested ‘antidandruff’ shampoos. Crude extracts of fresh leaves of pera (*Psidium guavava*) and flowers of delum (*Punica grantum*) has shown IZ s >10mm.

**Conclusion/s:** Prevalence of dandruff was 63.2% in the studied group. ‘Antidandruff’ shampoos and crude extracts of Pera leaves and Delum flowers showed *in-vitro* inhibitory effect on the growth of *Malassezia*.

**Keywords:** Antifungal effects, Dandruff, Herbs, *Malassezia*

**Prevalence, Associated Factors and Medication for Gastro-Oesophageal Reflux Disease Symptoms among Final Year, Advanced Level, Private-Tuition Attendees of Anuradhapura Municipal Council: A Descriptive Cross-sectional Study**

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**Background:** Gastro-oesophageal reflux disease (GORD) causes troublesome symptoms, and private tuition attendees have potential risk factors for GORD. Data on GORD among these students are scarce.

**Objective/s:** We aimed to determine the prevalence, associated factors and medication for GORD among final year, advanced level, private tuition attendees of Anuradhapura municipal council.

**Method:** A descriptive cross-sectional study was conducted using a self-administered questionnaire. Students scoring  $\geq 8$  in the Frequency Scale for Symptoms of GORD were considered to have GORD. Logistic regression ( $P < 0.05$ ) was used to find a significant association between the variables of interest and the presence of GORD.

**Results:** Fifty-two per cent (560/1114) had GORD. Heartburn received the highest score of 1495. Biology students had the highest prevalence of GORD (63% - 127/201). Female sex ( $P < 0.001$ ), being boarded ( $P = 0.008$ ), chronic illness ( $P = 0.008$ ), midnight snack ( $P = 0.002$ ), frequent lack of breakfast ( $P < 0.001$ ), quick eating ( $P = 0.006$ ) and inadequate sleep ( $P < 0.001$ ) were significantly associated with GORD. Proton pump inhibitors were the most common medication used (52% - 67/130). Thirty-five per cent of the participants (45/130) have self-medicated for GORD. Out of those who self-medicated, most have got their medication from a pharmacy (71% - 32/45).

**Conclusion/s:** A high prevalence of GORD was found among private tuition attendees. Preventive measures could reduce the disease burden among the target population by focusing on the dietary and behavioural factors which were found to have a significant association with GORD.

**Keywords:** Boarded students, Lack of breakfast, Midnight snacks, Quick eating

## **Health Problems Experienced by Snakebite Victims Following Hospital Discharge and the Treatment Seeking Pattern: A Descriptive Cross-sectional Study**

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**Background:** The post-discharge health issues of the snakebite survivors and their treatment seeking pattern are poorly studied.

**Objective/s:** To identify the nature and frequency of health problems experienced by snake bite victims and their health seeking pattern after the hospital discharge.

**Method:** A structured telephone survey-based, descriptive, cross-sectional study was conducted on snake bite victims who were admitted from 1<sup>st</sup> October to 12<sup>th</sup> December 2018 at the Teaching Hospital Anuradhapura. Patient perceived health problems 2-3 months after the discharge and adopted alternative treatments were recorded.

**Results:** Of 160 patients, 94 were contacted. Of them, 61 (64.9%) had health issues following discharge, of which 36 (59.0%) sought treatments. Fifty-three (86.9%) had issues related to site of bite. Swelling 36 (59%), pain 20 (32.8%) and numbness 17 (27.8%) were the commonest local problems. Patients experienced local pain, swelling and numbness with a median of 5, 10 and 10 days respectively. These effects were persistent in some patients even by 3 months. Thirteen complained blurred vision which lasted a median of 4 weeks. Twenty (32.8%) worried of the persistence of above effects. Allopathic, traditional, mixed treatments and home remedies were sought by 15, 15, 5 and 1 patients respectively. Persuasion from friends and relatives made majority to seek traditional treatments. All satisfied with the treatment options they sought.

**Conclusion/s:** A high proportion of patients suffers from unresolved effects of snakebite and seeks allopathic and traditional treatment, after the discharge from hospital. Educating patients on the discharge, about the possible persistence of health issues and their impact is recommended.

**Keywords:** Health issues, Snakebite, Swelling

## **The Effect of Breakfast on Cognitive Functions of Medical Students, Faculty of Medicine and Allied Sciences (FMAS), Rajarata University of Sri Lanka**

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**Background:** The breakfast affects the physiological functions of the body; nevertheless, missing the breakfast happens more often in modern life style

**Objective/s:** This study aims to assess the effect of the breakfast on cognitive functions of medical students, FMAS, Rajarata University of Sri Lanka.

**Method:** The cognitive function of a cohort of 84 volunteer medical students was assessed in an institutional cross over study using 2 equally balanced standard questionnaires, before and after having the breakfast in separate assessments in the same environment and giving 2 weeks' time gap in-between the two assessments. The blood glucose level of 24 students was measured in both the instances. A modified activation-deactivation check list was filled to assess the mood changes of the students before and after having the breakfast. The results were analyzed by paired T test.

**Results:** The total scores of questionnaire ( $p < 0.0001$ ), strooptest ( $P < 0.0001$ ), Digit Span test ( $P = 0.005$ ) were significantly high after having the breakfast. The components of cognitive function; Creativity, Hearing, Observation, Reaction time and Language ability showed significantly higher scores after having the breakfast ( $P < 0.0001$ ). The score of IQ test was not significantly affected by the breakfast. There was no relationship between blood glucose level increase related to the breakfast and cognitive function; however 70% of mood improvement was observed after having the breakfast.

**Conclusion/s:** This study reveals that the breakfast improves the cognitive function of Medical students via mood changer rather than via the blood glucose level increase.

**Keywords:** Blood glucose, Breakfast, Cognitive function, Medical students, Mood

## **Microbial Contamination of Headphones at the Information Technology Laboratory of Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka**

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**Background:** The headphones available in the medical faculties are shared by students. Apart from being a vector of commensals, these headphones can easily harbour potential pathogens including MRSA as the Medical students are constantly exposed to hospital environment. Thus, sharing of headphones could be a potential health threat.

**Objective/s:** To assess microbial contamination in headphones at Information Technology Laboratory of Faculty of Medicine and Allied Sciences, Rajarata University.

**Method:** Twenty commonly used headphones were selected from the IT laboratory. Swabs were taken from both earpieces of the headphones. They were introduced in to sterile saline, vortexed and 0.1ml each was introduced to Blood Agar, MacConky Agar and Sabourauds Dextrose Agar for the isolation of bacteria and fungi. Identification of microorganisms and detection of MRSA were carried out using standard techniques. Colony forming units (CFU) per swab was calculated.

**Results:** Bacteria were found in all 20 (100%) headphones and each had > 300 CFU/swab. *Staphylococcus aureus*, *Streptococcus spp*, gram negative cocci, gram positive bacilli, oxidase negative non-lactose fermenting organisms and, *Pseudomonas spp* were isolated. Four out of 20 headphones had MRSA. Fungi were found in 8/20 (40%) headphones which included *Aspergillusniger*, *Aspergillus fumigates* and *Penicillin spp*.

**Conclusion/s:** The study concluded that all headphones tested were contaminated with potentially pathogenic microbes including MRSA. Users are recommended to practice good hand hygiene and headphones should be regularly cleaned with non-damaging disinfectants. Permitting the use of private headphones is emphasized to prevent the spread of life threatening infections.

**Keywords:** Bacteria, Fungi, Headphones, Information Technology Laboratory, MRSA

## **Clinical Characteristics and Outcome of Patients with Community Acquired Pneumonia (CAP) Admitted to the Medical Wards in Teaching Hospital Anuradhapura (THA) Sri Lanka**

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**Background:** CAP is one of the common infectious diseases and important cause of mortality and morbidity worldwide. About 1000 patients are admitted to the THA annually.

**Objective/s:** To determine the clinical characteristics of hospitalized patients with CAP and to assess the adherence to the local antibiotic guidelines.

**Method:** This descriptive study was carried out at medical units of THA, for 4 weeks february, 2019. Clinical data were collected using interviewer administered questionnaire from 88 patients.

**Results:** The sample consists of 48.8% males and 51.1% females. The average age was 62 and SD was 18.26. Commonest symptom was productive cough (81.8%). Patients without fever was 28.4%, 45.5% had headache, 51.1% had pleuritic type chest pain and 10.2% showed confusion. Most patients had moderately severe pneumonia according to CURB-65 Score (44.3%) and 35.2% of patients were not treated according to local antibiotic guidelines, majority of them belonged to mild category (62.5%). Significant proportion (43.8%) of patients was given intravenous drugs in appropriately. Patients who did not have comorbidities was 28.4%. Only 2 patients developed plural effusion as a complication. Ten patients were treated at the HDU, and others were managed in wards. Average hospital stay was the 3 days with SD 2.61. Two deaths observed out of 88 patients.

**Conclusion/s:** Commonest symptom was the productive cough and 28.4% patients had no fever. Most uncommon symptom was the confusion (10.2%). Complication rate was low in this sample (5.6%). Percentage of patients who were not treated according to the local antibiotic guideline 35.2%.

**Keywords:** Antibiotics, Anuradhapura, CAP out come, Clinical characteristics, Pneumonia

## **Identification of Microbes Present in Food Packaging Materials Collected from Anuradhapura Municipal Area**

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**Introduction:** Food packaging materials are used to achieve multiple purposes in food industry. These materials are habitat by various microorganisms depending on their characteristics. They may lead to various food-borne diseases. Therefore, evaluation of microbial properties of those materials are vital.

**Objective/s:** Aim of the present study was to isolate and characterize the species of bacteria found in food packaging materials. Pathogenic bacteria were further identified by bio chemical and molecular methods.

**Method:** Food packaging materials (n=5) from food outlets in Anuradhapura municipal area, were examined by using defibering and smear methods. Isolated colonies were characterized by using bio chemical methods. Pathogenic Escherichia coli and Pseudomonas spp were further identified by using real time PCR assay using specific primers.

**Results:** The total colony counts ranged from 2.7x10<sup>5</sup>cfu/g to 25.6x10<sup>5</sup>cfu/g. The mean colony count from smear and defibering method were 5.57x10<sup>5</sup>cfu/g and 16.7x10<sup>5</sup>cfu/g (p=0.083) respectively. The highest contamination was observed in waste paper and cardboard lunch boxes showed the minimum contamination. Based on the colony morphology, gram staining and bio chemical tests, four different bacterial isolates were identified including Staphylococcus aureus, Streptococcus spp, Escherichia coli and Pseudomonas aeruginosa. Real time PCR confirmed the presence of pathogenic E.coli with actual value ranged from 29 to 36.

**Conclusion/s:** The packaging materials showed significant level of contamination more than the standard acceptance level. The consumers and the vendors need to be discouraged using these packaging materials by creating an awareness regarding its harmful effects.

**Keywords:** Disease, Food, Food-Borne, Microbes, Packaging

## **Awareness and Attitude towards Children with Attention Deficit Hyperactive Disorder (ADHD) among School Teachers of Anuradhapura District**

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**Background:** Attention Deficit Hyperactive Disorder (ADHD) is a psychiatric disorder with the highest prevalence among children aged 4-17 years. Therefore, the knowledge and attitude of teachers is vital in providing an optimal learning environment.

**Objective/s:** To assess the knowledge and the attitude of school teachers of Anuradhapura district about ADHD in school children.

**Method:** A descriptive cross sectional study with systematic cluster sampling with probability proportionate to size was conducted. We collected data from 458 teachers from twenty-one schools of Anuradhapura district using a self-administered questionnaire comprised of the translated and validated Knowledge of Attention Deficit Disorder Scale (KADD), Teachers Attitude towards Inclusion Scale (TAIS) and the Perceived and Actual Sources of Information.

**Results:** Out of the 458 participants, 61.9% lacked sufficient knowledge and 61.0% had misconceptions. A positive attitude is shown by 68.4% of the teachers. The knowledge positively correlated with age (Spearman's correlation 0.031), service period (Spearman's correlation 0.025) and student contact hours (Spearman's correlation 0.006). According to TAIS 1, teachers' attitude towards hyperactive children positively correlates with the student contact hours. According to TAIS 2, attitude towards attention deficit children positively correlate with age, service period and student contact hours. 76.0% and 60.0% of teachers had gained knowledge from the classroom and electronic media, respectively. Although 67.7% of teachers prefer to obtain knowledge from seminars, only 42.6% have previously received thus.

**Conclusion/s:** Although teachers possess a positive attitude towards children with ADHD, their knowledge is inadequate which should be addressed by training programs focused on ADHD.

**Keywords:** Attention Deficit Hyperactivity Disorder, Child Psychiatric Disorders, Hyperkinetic Disorder, Teacher's attitude, Teacher's knowledge

## **Prevalence of Varicose Veins among the Nursing Staff of Teaching Hospital Anuradhapura; A Cross sectional Risk Group Analysis**

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**Background:** Varicose vein of the lower limb is one of the commonest surgical problem. The etiology of the lower limb varicose veins is multifactorial. They include increased intravenous pressure caused by prolonged standing, pregnancy, familial and congenital factors.

**Objective/s:** This study aims at determining the prevalence of varicose veins among the nursing staff of Teaching Hospital Anuradhapura.

**Method:** A cross sectional study was conducted in January 2019 among 442 nurses working at Teaching Hospital Anuradhapura. Their consents were obtained. A self administered questionnaire was used to collect data on associated factors towards varicose veins. Varicose veins were examined under tourniquet test. Descriptive statistics were used to describe data.

**Results:** A total number of 442 nurses participated in the survey and the diagnostic testing with 98.1% females. From the survey analysis and test results of prevalence of varicose vein in nurses in Teaching Hospital Anuradhapura estimated to be 37.1%. Presence of varicose veins was significantly high among nurses those who have prolonged service years ( $P < 0.05$ ). Statistically significant factors for venous reflux were Pregnancy (OR = 3.216, 95% CI = 2.06 - 5.019), Family history (OR = 2.363, 95% CI = 1.592 - 3.508). The CEAP classification placed most of the patients in C2 Class (35.4%) followed by C1 Class (34.1%), C4 Class (14.6%) and C3 Class (7.3%).

**Conclusion/s:** These results indicate a relatively high prevalence of varicose veins among nursing staff of Teaching Hospital Anuradhapura.

**Keywords:** CEAP, Nurses, Prevalence, Varicose vein, Service years

## **Prevalence and Associated Factors of Facebook Addiction in Grade Thirteen Students in the Chilaw Educational Zone: A School-Based, Cross-Sectional Study**

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**Background:** Even though Facebook is one of the most popular social networks in Sri Lanka, especially among adolescents and young people, thus far there are no published literature exploring Facebook addiction (FA) and its associations among school students.

**Objective/s:** To determine the prevalence and associated factors of FA in grade thirteen students in the Chilaw educational zone

**Method:** A school-based, cross-sectional study was conducted among 820 grade thirteen students in nine 1AB and 1C Sinhala medium government schools in the Chilaw educational zone using a self-administered questionnaire, including the validated Sinhala version of the Bergen Facebook Addiction Scale (BFAS). The prevalence (with 95%CI) of FA was computed using predetermined cut-off values for the BFAS. Associated factors of FA were determined by calculating adjusted odds ratios (AOR) with 95%CI using multivariable logistic regression.

**Results:** The response rate was 95.7% (n=785) and 351 students (44.7%) had a Facebook account at present. The prevalence of FA in the sample and among current FB users were 9.4% (95%CI=7.4%-11.5%) and 21.1% (95%CI=17.0%-25.0%) respectively. Students; who do not have siblings (AOR=2.1,95%CI=1.2-3.7; p=0.008), whose parents are the main source of financial assistance for Internet data (AOR=2.2,95%CI=1.1-4.6; p=0.008), who spend less than 15 hours for education per week (AOR=2.2,95%CI=1.2-3.9; p=0.009), who spend at least one hour on FB on week days (AOR=2.5,95%CI=1.4-4.3; p=0.001) were more likely to have FA.

**Conclusion/s:** The prevalence of FA among grade thirteen students in the study setting is high, highlighting the need for more awareness programmes for students, parents and teachers to minimise Facebook usage.

**Keywords:** Facebook, Facebook Addiction, Grade Thirteen, Prevalence, School-based study

## **Prevalence of Anemia, Its Types and Factors Associated with it among Patients Admitted to Professorial Medical Unit, Teaching Hospital Anuradhapura**

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**Background:** Anemia is the reduction of blood Hb levels below the reference range for age and sex. Dietary habits, socio-economic state and other morbidities have been found as co-factors that lead to anemia. This research investigates the association of such factors.

**Objective/s:** To determine the prevalence of anemia, its types and factors associated to it in patients admitted to Professorial Medical Unit, Teaching Hospital Anuradhapura.

**Method:** A hospital based cross sectional descriptive study was conducted in the medical ward of Professorial Medical Unit, THA. Collected sample size was 231. A self-administered Sinhala medium questionnaire was distributed among the patients admitted within a period of two weeks, excluding patients already using iron supplements, critically ill patients and patients admitted only for investigation purposes or for blood transfusion.

**Results:** According to the results obtained 61.5% (142/231) were found to be anemic with a mean Hb level of 11.571 (SD=2.46). 57.7% males (71/123) and 65.70% females (71/108) were anemic with a mean Hb of 12.062 (SD=2.624) and 11.012 (SD=2.140) respectively. 56.10% of males had normocytic anemia and 65% of females had microcytic anemia as the predominant type and 34.14% of males were moderately anemic and 43% of females were mildly anemic. Consumption of alcohol (p=0.046) and conditions such as ischemic heart disease (p=0.023) and chronic kidney disease (p=0.020) had a significant association with anemia. Odds ratio revealed that having asthma (1.347), consuming tea (1.235) and being a male (1.405) had a risk of getting anemia.

**Conclusion/s:** A high prevalence anemia with a significant association with several co-factors was found among the patients.

**Keywords:** Anemia, Anuradhapura, Patients, Prevalence, Sri Lanka

## **Dietary Factors Affecting the Formation of Urinary crystals in the Medical students of Rajarata University of Sri Lanka: A Pilot Project**

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**Background:** Renal stone formation occurs due to nucleation and aggregation of urinary crystals. Many factors have been found to affect urinary crystal formation. Among them dietary factors play a significant role.

**Objective/s:** The aim of this study is to determine effects of food articles on urinary crystal formation.

**Method:** 10 medical students were selected as the sample for. Standard breakfast was given to all the subjects and were not allowed to have any food or drink until the collection of the urine sample after 150 minutes. To get the test sample, after the breakfast, the subjects were given constant amount of tamarind, garcinia, soursop, custard apple and wood apple respectively. Urine samples were obtained after 150 minutes of having the testing food article, kept in the refrigerator overnight, centrifuged at 4000rpm for two minutes. The supernatant was discarded by inverting and 20µl was placed on a glass slide, covered with a coverslip and photographed using a photomicroscope.

**Results:** Highest number of total crystals was observed in wood apple (158) whereas the least number is for tamarind (97). When considering only the calcium oxalate crystals, some subjects do not shed none for standard breakfast ( $n=8$ ) or with any of the food article ( $n=4$ ). highest was observed in wood apple (113) and lowest in tamarind (44).

**Conclusion/s:** It was concluded that the dietary factors affects the urinary crystal formation.

**Keywords:** Urinary crystals, renal stones, Garcinia, soursop, custard apple, tamarind, wood apple

**A Cross Sectional Study of Preference Mode of Delivery and Influencing Factors for Their Decision among Pregnant Mothers Attending to Antenatal Clinic, Obstetric unit, Teaching Hospital, Anuradhapura**

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**Background:** Mode of delivery either caesarian section or vaginal delivery is a key event in any pregnancy. Caesarian section is in increasing trend in worldwide and over 20 million caesarian sections happened each year. This study aims to access the preferred mode of delivery and associated factors for their decision in women attending to Teaching Hospital Anuradhapura.

**Objective/s:** To determine the preference of mode of delivery and influencing factors for their decision among pregnant mothers attending to antenatal clinic, Obstetric unit, Teaching Hospital, Anuradhapura.

**Method:** A hospital based cross sectional interview based study was performed interviewing 258 pregnant women attending antenatal clinic at their first visit at obstetric clinic Teaching Hospital, Anuradhapura. Data was entered to excel database and SPSS software using chi-square test, logistic and linear generation methods.

**Results:** A total of 258 women were interviewed. Out of 258, 70.93% were preferred normal vaginal delivery while 18.99% preferred caesarean section and 10.08% had no idea. Majority 82.95% of participants took self decision on their preferred mode on delivery after receiving information from public health midwife (44.57%). Main factors influenced their decision were fear of surgery (48.63%), short hospital stay (45.36%), rapid post partum recovery (46.99%) and ability to be with the baby at 1st hour of life.

**Conclusion/s:** Most preferred mode of delivery was NVD and factors influenced their decision were fear of surgery, short hospital stay, rapid post partum recovery and ability to be with the baby at 1st hour of life.

**Keywords:** Caesarian section, Influencing factors, Obstetrics, Preferred mode, vaginal delivery

**Awareness of First Aid Techniques Used in Emergency Situations among First Year Students of Faculty of Social Sciences and Humanities (SSH), Rajarata University of Sri Lanka (RUSL)**

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**Background:** First aid is the assistance given to any person suffering a sudden illness or injury with care to preserve life, prevent the condition from worsening and to promote recovery.

**Objective/s:** To assess the awareness of first aid techniques among first year students of the Faculty of SSH, RUSL.

**Method:** A descriptive cross sectional study among 352 First year students selected by simple random sampling. Self-administered questionnaire was given and analyzed results by SPSS.

**Results:** 244 participants (69.32%) were females. Mean first aid knowledge score of the sample tested was 12.46 in a scale from 0 – 25, where a higher score represents a better knowledge. 74% females had poor knowledge, and 69% male had poor knowledge ( $P > 0.05$ ). 87 % students from rural areas had poor knowledge and 45% students from urban areas had poor knowledge ( $P < 0.01$ ). Students with well educated parents had better knowledge (35%) compared to students with low educated parents ( $P < 0.01$ ).

**Conclusion/s:** Overall first aid knowledge was poor. Rural lived and less educated parents were significantly associated with poor first aid awareness and not the gender. Awareness programmes recommended.

**Keywords:** First aid knowledge, First year students

## Effects of Heroin on Visual Reaction Time

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**Background:** Narcotics like heroin affects many areas of brain which are responsible for complex behavior like planning, problem solving and decision making. Reaction time is an indicator of the processing ability of central nervous system and simple determinant of sensory motor association and performance of an individual.

**Objective/s:** The main objective of this study is evaluation of simple visual reaction time of heroin addicts in Nittambuwa rehabilitation centre and describes its association with the period of drug abuse and withdrawal.

**Method:** In a cross-sectional study we compared visual reaction time between a group of drug addicts and a community living comparison group not addicted to narcotics. Visual reaction time was calculated using “Inquisit Lab 5” software.

**Results:** This analysis was based on the data from hundred males. (Fifty heroin addicts and fifty controls). There was a significant association between visual reaction time and the age ( $P=0.04$ ). Neither education level nor dominant hand were correlated with VRT. Visual reaction time of drug addict group was markedly prolonged ( $B=34.18$  in regression analysis,  $P<0.0001$ ) compared to controls. Duration of addiction was significantly correlated ( $P<0.0001$ ) with increased VRT.

**Conclusion/s:** Heroin appears to slow the cognitive processes involved in visuo-motor information processing. Further evaluation with the withdrawal period and improvement of VRT is suggested as this is extremely important in skilled tasks such as driving.

**Keywords:** Central nervous system, cognitive function, heroin, visual reaction time

## **Preferences on Breaking Bad News in Newly Diagnosed Cancer Patients in Anuradhapura**

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**Background:** Many patients are newly diagnosed with cancer annually and breaking bad news to these patients is a tough task. Local Physicians have to concern about the emotional situation of the patients while giving their diagnosis rather than treating them.

**Objective/s:** To determine recent experiences of cancer patients on receiving bad news and family member's preferences on breaking bad news and determine patient's preferences on breaking bad news practice.

**Method:** A Cross sectional study was performed in Teaching Hospital Anuradhapura in and out oncology clinic. 100 patients were investigated through interview-based questionnaire.

**Results:** On analysis of the 100 patients, most of them were females (67%) and breast cancer is the most prevalence (21%). Most of the patients were satisfied with information given by the physician. They preferred to be in isolated sector and wanted loved ones present with them when the bad news was broken to them (66%). The patients highly appreciated on speaking friendly manner with them (85%). Majority were wanted more information about their condition and all aspects of medical issues such as treatments. 61% of family members preferred to talk with their physicians alone.

**Conclusion/s:** Most of the patients were satisfied with currently occurring breaking bad news practices in regional hospitals. Patients expect to get their diagnosis in isolated sector and they appreciate to being with family members when they are receiving bad news. Patients expect to involve in decision making on their treatment options with physicians.

**Keywords:** Breaking bad news, Cancer patients, Preferences

## **The Level of Knowledge and Practice of Foot Care in Patients with Diabetic Foot Ulcers in Teaching Hospital Anuradhapura**

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**Background:** Diabetes mellitus is a major non-communicable disease in Sri Lanka. Diabetic foot ulcer, one of the major complications of diabetes mellitus accounts for 85% of amputation among all other amputations. Effective identification, education and foot care practice prevent such sorrowful endings.

**Objective/s:** To assess the level of knowledge and practice of foot care principles among patients with chronic diabetic foot ulcer in Teaching hospital Anuradhapura.

**Method:** Descriptive cross sectional study was conducted at vascular surgery clinic, diabetic and endocrine clinic & general surgery clinic in Teaching Hospital, Anuradhapura within a time period of 02 weeks from 4th of February 2019 to 18th of February 2019. Diagnose of diabetic foot ulcer was aided by the diagnostic card. Mentally ill patients and staff members with already diagnosed diabetic foot ulcers were excluded. Interview administered questionnaire was used to collect data. Data was analyzed using SPSS – 25.

**Results:** The study sample included 80 patients: 58.8% were males and 41.3% were females. Mean age of the population was 60.85. There is no significant difference in related to Glycemic control (98.8% vs 90.0%,  $P > 0.05$ ). There is significant difference in related to foot inspection ( 86.3% vs 77.5%,  $P = 0.002$ ), Inspection of areas between toes (61.3% vs 50.0%,  $p = 0.000$ ), Usage of mirror or someone to foot inspection ( 28.7% vs 0%,  $p =$ ), Foot drying (73.8% vs 62.5%,  $p = 0.000$ ), Drying the areas between toes (55.0% vs 38.8%,  $p = 0.000$ ), Foot cleaning (85.0% vs 70.0%,  $p =$  ), Using foot wear outdoor (92.5% vs 76.3%,  $p =$ ), Using foot wear indoor (45.0% vs 28.7%,  $p = 0.000$ ), Inspecting and palpating inside the shoes (51.2% vs 36.3%,  $p = 0.000$ ), Cutting nails straight across (32.5% vs 21.3%,  $p = 0.000$ ), Not wearing tight shoes (53.8% vs 40.0%,  $p =$ ), Looking for a doctor when get corn & calluses (46.3% vs 23.8%,  $p = 0.006$ ).

**Conclusion/s:** Our results shows that practice is significantly poor than knowledge on diabetic foot care among diabetic foot ulcer patients. So it would be beneficial to take preventive measures like expanding the education on the sorrowful endings of diabetic foot ulcer.

**Keywords:** Knowledge, Practice, Foot care, Diabetes mellitus, Foot ulcer, Teaching Hospital Anuradhapura

## Economic Cost of Snakebite in Teaching Hospital Anuradhapura

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**Background:** Snakebite is a disease of poverty. Even in Sri Lanka victims of snakebite are socioeconomically deprived. Previous cost surveys gathered data retrospectively: they inquired from community sample about snakebite during last 12 months.

**Objectives:** To calculate the direct, indirect costs, and anti-venom usage.

**Method:** We conducted a cross sectional prospective study at THA. The sample size was calculated with power 80% and significance 5%. Consecutive consenting adult patients admitted with snakebite were recruited. We obtained cost data from the pharmacist, hospital records and cost accounts, and indirect cost from a questionnaire. Median and IQR for direct, indirect and total cost for a patient during hospital stay and anti-venom usage was calculated in SLR.

**Results:** 57 patients (38 males) were recruited. Mean age is 45.8 (SD 15.4) years, 44% were farmers and 35% were housewives or unemployed. 39% were bitten during agricultural activity and 53% were bitten at home or in the garden. Vipers bit 30 patients and 16 were given AVS and 81% developed reactions. Direct cost (median) 21821(IQR 20351-48014) SLR, indirect cost 5335 (2592-9111) and out of pocket expenditure 3577 (1845-5860) and income lost 1500 (0-4500). There was significant difference between patients given AVS in all the above cost categories (U 0.0, Z -5.83, p=0.000; U 105, Z -3.96, p=0.000; U 175, Z -2.72, p=0.007; U 170, Z -2.95, p=0.003) when using Mann Whitney U test.

**Conclusion/s:** Snakebite cost 5077 SLR in out of pocket expenditure to the patient with significant escalation if it was a venomous bite.

**Keywords:** Anti-venom, Direct cost, Indirect cost, Out of pocket expenditure, Snakebite

## **Attitudes towards Euthanasia among Final Year Medical Students of Faculty of Medicine and Allied Sciences of Rajarata University of Sri Lanka**

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**Background:** Euthanasia is intentionally ending the life of a person at their voluntary and competent request. Active euthanasia is when death is caused by an act. Passive euthanasia is when death is caused by an omission of ordinary or extraordinary care given to sustain life. Although euthanasia is legalized in many countries it remains a controversial issue among doctors as well as general public.

**Method:** This study was carried out among Final Year Medical Undergraduates of Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka to describe their opinion on euthanasia. Data was collected using a self-administered questionnaire following informed consent.

**Results:** A total of 162 students completed the study and 55.6% were females. Majority (82.1%) of participants were Buddhists while Muslims, Christians and Hindus accounted for 8.6%, 6.8% and 1.9% respectively. A majority of 53.7% expressed that euthanasia is unacceptable however higher percentage of males (52.8%) than females (41.1%) agreed with euthanasia. Among Buddhists 48.9% accepted euthanasia while 45.4% of Christians and 21.4% of Muslims accepted. Gender and religion based differences were not statistically significant ( $p > 0.05$ ). Among students accepted euthanasia 30.8% agreed only for active euthanasia, 35.9% only for passive and 33.3% agreed both. Higher percentage of males (52.78%) than females (40%) supported legalizing euthanasia. Significant proportion of students who supported legalization (62.2%) expressed that clinical exposure affected their opinion while only 17% of non-supporters accepted the same. ( $P < 0.05$ )

**Conclusion/s:** Gender and religion do not influence the opinion on euthanasia significantly while clinical exposure may affect.

**Keywords:** Euthanasia, Attitudes, Clinical exposure

## **Large Intra-batch Variation of the Content of Two Indian Polyvalent Antivenoms and Their Ability to Neutralize Russell's Viper (*Daboia russelii*) Venom Procoagulant Activity**

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**Background:** Indian polyvalent anti-venom (IPAV) is the only specific treatment for snake envenoming currently used in Sri Lanka. Significant inter-batch variation of the efficacy of IPAV is reported.

**Objective/s:** The aim of this study is to investigate the intra-batch variation of protein content and the efficacy of two brands of IPAV.

**Method:** Ten vials each from Vins (batch:01AS17073) and Bharat (batch: A05317045) IPAV were investigated. Protein content was measured using Bradford protein assay. Procoagulant activity was measured by turbidimetric method. Half-maximal Inhibitory Concentrations (IC<sub>50</sub>) of individual vials of two brands in neutralizing the procoagulant activity of 0.21 µg of Russell's viper venom in 100 µl human Fresh-Frozen Plasma (FFP) were calculated by non-linear regression. All experiments were done in triplicates.

**Results:** Mean dry powder weight of Vins and Bharat IPAV were 759.0(SD:74.6) mg and 632.3(SD:8.9) mg respectively. Mean protein percentage in the antivenom powder (w/w%) was 35.2(SD:11.5) % in Vins and 32.8(3.9) % in Bharat. The largest difference of protein percentage between two vials in the same batch for Vins and Bharat was 3.4 and 1.5 folds, respectively. Median IC<sub>50</sub> values for Vins and Bharat were 97.6(IQR:69.2-226.1) and 77.8(IQR:50.7-127.4) µg/ml of FFP. Protein percentage was not associated with the efficacy in both brands.

**Conclusion/s:** There was a large intra-batch variation of dry powder weight and protein percentage in Vins. The efficacy in neutralizing the procoagulant activity of Russell's viper in both brands varied remarkably. This variation could result inconsistency of the therapeutic effect in patients.

**Keywords:** Antivenom, Efficacy, Intra-batch variation, Procoagulant activity, Protein content

## **Life Expectations, Reasons for School Dropouts and Health Related Problems among Adolescents and Youth Not on Education, Employment or Training (NEET) in Anuradhapura District**

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**Background:** Adolescents and youth Not on Education, Employment or Training (NEET) are difficult to reach and remain a challenge to the productivity and health of a country.

**Objective/s:** To explore and describe life expectations, reasons for school dropout, health barriers, psychological status and selected life skills of adolescents and youth NEET in Anuradhapura district.

**Method:** We conducted a mixed method study. In the first phase (qualitative) focus group discussions (fifteen) and in-depth interviews (six) were conducted on adolescents and youth NEET, teachers, parents, public health midwives, Medical Officers of Health and community dwellers, in four different communities of Anuradhapura. Thematic analysis was conducted. Secondly, a descriptive cross-sectional study was carried out among adolescents and youth NEET using self-administered questionnaires.

**Results:** Phase1; Life expectations were restricted. The reasons for school dropouts were; being discouraged, personal decision, financial problems, family issues and problems in the education system. Substance abuse, self-harm and reproductive health issues were prominent. Social norms, trends, use of technology and desire to earn influenced health and life expectations. Phase 2; Of 197 adolescents and youth the mean age group was 20-22 years and 63.5% studied up to Ordinary Level. Of the parent's, 35.3% were happy or didn't care about school leaving. Prevalence of psychological distress was 7% and was higher among females ( $p < 0.05$ ). Prevalence of substance usage was 22.3%. The least perceived life skill was "communication" (33%).

**Conclusion/s:** Health and wellbeing of adolescent and youth NEET are threatened by multiple socio-cultural and political factors that may restrict their life expectations.

**Keywords:** Adolescents, health barriers, Life expectations, NEET, Psychological state

## Self-Medication Practices among Undergraduate University Students in Rajarata University of Sri Lanka

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**Background:** Self-medication among university students is a common practice, yet with variable prevalence indifferent parts of the world. Information on self-medication among Sri Lankan university students are scarce.

**Objective/s:** To describe self-medication practices and knowledge regarding self-medication among undergraduates of Rajarata University of Sri Lanka (RUSL).

**Method:** A descriptive cross-sectional study was conducted among all second-year undergraduates in RUSL. Data was collected using a self-administered questionnaire and descriptive analyzed was done.

**Results:** Study included 711 Students from all 6 faculties. Majority [508(71.4%)] were females. Among 650(91.4%)students who reported an illness during previous6months, self-medication prevalence was 70.2% (n=456); Medicine-57.0% Agriculture-70.4%, Social Sciences-41.3%, Applied Sciences-77.3%, Management-80.3%, Technology-78.5%. Commonest reason for self-medication was perception of non-severe illness (61.8%), followed by, need of quick relief (18.2%) and unavailability of a doctor (10.3%). Allopathic drugs were used by 428 (93.9%) either alone (71.1%) or with Ayurvedic/native remedies (22.8%). Paracetamol was used most [398(93.0%)] followed by anti-histamines [251(58.6%)]. Antibiotics were used by 75(17.5%). Majority [394(86.4%)] self-treated using past self-experiences with similar illness. Awareness regarding likelihood of side effects, risks of drug overdose, interactions and self-medication in chronic diseases were good (over 70% in all faculties) however knowledge gaps were observed regarding self-medication in pregnancy and lactation especially in non-science-based faculties. Moreover, 43.6% was unaware of masking effect of self-medication on clinical features, obscuring clinical diagnosis.

**Conclusion/s:** Self-medication, mainly with allopathic drugs is common among undergraduates of RUSL. They require improvements in awareness regarding responsible self-medication as in pregnancy, lactation and likely harmful effects.

**Keywords:** Allopathic drugs, Self-medication, University students

## **Prevalence of Fatty Liver (FL) among Medical Students of Faculty of Medicine (FMAS), Rajarata University (RUSL); Are Obese Males at a High Risk of Getting the Disease; A Cross Sectional Study**

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**Background:** Fatty liver (FL) disease is an emerging global health problem with many adverse outcomes including cirrhosis and hepatocellular carcinoma. However it has not been investigated properly in Sri Lanka. Medical students are considered as a high-risk population for getting FL.

**Objective/s:** To determine the ultrasound based prevalence of FL among the undergraduates of FMAS, RUSL and to assess the association with BMI.

**Method:** A descriptive cross sectional study was conducted among undergraduates from 28th January to 24th February 2019. Initially BMI was calculated and then stratified random sampling was performed to recruit students to each BMI class and a consultant radiologist performed an abdominal ultrasound scan to detect FL.

**Results:** Among 517 of students measured BMI, 190 (77 males, 113 females) were selected for ultrasound scan. (Underweight=36 (18.94%), Normal=95 (50%), Overweight=30 (15.38%), Obese=29 (15.26%)). The prevalence of fatty liver was 21.58% (grade1, (11.5%), grade2, (9.9%)). Fatty liver prevalence in each BMI class were underweight=3(8.3%), normal=19 (20%), overweight=7 (23.3%), obese=12 (41.3%). Obese/Overweight students have higher risk of getting FL (Chi-Square 19.922, Odds Ratio=2.3, p=0.003.). The proportion of grade 2 FL was higher in obese category (n=9, (31%)) and no students had FL in underweight category. Prevalence of FL was significantly higher among males. (24 (31.2%) vs. 17(15%) in females (chi-square 7.350, Odds Ratio=2.5, p=0.025).

**Conclusion/s:** A considerable proportion of medical students are having FL. Therefore, they are at a higher risk of developing adverse events of FL. Public health prevention actions for high risk population targeting specific risk factors must be initiated.

**Keywords:** NAFLD, Obesity, Overweight, BMI, Fatty liver

## **Exploration of the Effect of Moon on the Frequency and Severity of Snake Bites**

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**Background:** We investigated the popular belief of the effect of lunar cycle on the snakebites and to explore the related knowledge of the traditional medical practitioners.

**Objective/s:** To investigate effect of moon on the severity and frequency of snakebites.

**Method:** A retrospective analysis of data of 776 patients from Anuradhapura Snakebite Cohort from August 2013 to October 2014 was performed. Frequency and the severity of bites on different days of lunar cycle were studied. A qualitative study based on in-depth interviews with traditional practitioners who treat snakebite was conducted until data saturation and thematic analysis was performed.

**Results:** No difference in the frequency of snakebite admissions, the duration of their hospital stay, number of antivenom vials used per patient, fraction of patients with coagulopathy and neurotoxicity on a full-moon day, new-moon day and on any other day, and the four quarters of the lunar cycle was noted. There was no difference in the frequency of bites across lunar cycle, according to the species of snake. Traditional practitioners had opined on the effect of moon on snakebites. According to most, bite frequency does not change across lunar-phase. They expressed that envenoming rapid and severe in full-moon and new-moon days due to multiple reasons beyond their control, however were confident that a capable practitioner can save the patient.

**Conclusion/s:** Quantitative study found no relationship of the hospital data of snakebite frequency and severity with lunar day or phase. The traditional practitioners opined no effect of moon on the frequency, but on the severity of snakebite.

**Keywords:** Envenoming, Lunar Cycle, Moon, Traditional Medicine, Snakebites

## **Evaluation of Bacterial Diversity Using Traditional Culture and Next Generation Sequencing (NGS) Based 16S/Internal Transcribed Spacer (ITS) Ribosomal RNA (rRNA) Sequencing in Chronic Diabetic Foot Ulcers among Patients Admitted to Teaching Hospital, Anuradhapura**

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**Background:** Chronic Diabetic Foot Ulcers (DFUs) portray a significant burden on healthcare worldwide due to their infection and the risk of lower-extremity amputation.

**Objective/s:** This study compares the pathogenic bacterial diversity in chronic DFUs using traditional culture and NGS based techniques.

**Method:** A descriptive cross-sectional study was conducted and deep wound swab samples were obtained from 50 patients with chronic DFUs of 1-5 Wagner-Meggitt grade admitted to Teaching hospital, Anuradhapura within a period of 3 weeks. Wound infections were assessed using traditional culture and NGS based 16S/ITS rRNA sequencing using Ion Torrent. Presence of blaVIM and blaIMP antimicrobial resistance (AMR) genes in isolates were evaluated by quantitative Polymerase Chain Reaction (qPCR) using highly specific, previously validated primers.

**Results:** The study included 23(46%) males and the mean age of the study sample was 60.7. Of the 47 positive cultures, 35(70.0%) had mixed growths with a single fungal growth. The most frequent culture isolate was aerobic *Pseudomonas* spp.(n=27,54.0%) followed by *Staphylococcus* spp.(n=21,42.0%), *Proteus* spp.(n=10,20.0%), *Streptococcus* spp.(n=6,12.0%), *Escherichia* spp.(n=3,6.0%) and *Klebsiella* spp.(n=1,2.0%). 16S amplicon sequencing showed a large diversity of aerobes and facultative anaerobes (90%) but anaerobic *Bacteroides fragilis* (20.0%) was the commonest species detected, followed by *P.aeruginosa* (15.0%), *Streptococcus* spp. GroupB (15.0%), *Arcanobacterium haemolyticum* (15.0%), *Corynebacterium diphtheriae* (15.0%), *Corynebacterium simulans* (15.0%), *Klebsiella pneumoniae* (10.0%), *Enterococcus faecalis* (10.0%) and a single growth of *Candida albicans*. None of the isolates exhibited AMR through blaVIM or blaIMP genes.

**Conclusion/s:** A major component of the microbial community of chronic DFUs is occupied by anaerobic bacteria, which are non-culturable and undetectable by conventional methods.

**Keywords:** Anti-microbial resistance, Bacteria, Chronic diabetic foot ulcers, Next generation sequencing, Quantitative polymerase chain reaction

# Health Status and Emotional Intelligence (EI) among Prisoners of Anuradhapura, Sri Lanka; Does Lack of Emotional Intelligence Play a Role in Imprisonment; A Comparative Study

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**Background:** Enclosed environment of prison creates a viable place to spread communicable diseases. EI plays an important role in managing one's aggression and impulsivity. Most of the imprisonments occur due to incidents that could have prevented with proper management of aggression and emotions.

**Objective/s:** The objective in this study was to describe the physical health status and EI among prisoners of Anuradhapura prison and to compare with general population.

**Method:** A descriptive cross sectional comparative study was conducted at Anuradhapura prison Sri Lanka from 5th to 8th of February 2019. Age, sex and education levels matched comparative group was randomly selected from the general population residing around the prison area. All participants were assessed using previously validated Schutte Self-Report EI Test and Health status were obtained through a questionnaire.

**Results:** The total sample size was 256 (Prisoners=139 (54.3%), General population = 117(45.7%)) with a mean age of 42.2 (SD=11.2). Most common communicable diseases among prisoners were Scabies (n=22,15.8%), Dandruff (n=15,10.8%) and Chickenpox (n=7,5.0%). Most common non-communicable diseases were Asthma(n=7,5.0%), Diabetes mellitus (n=4,2.9%) and Hemorrhoids (n=4,2.9%). Substance abuse were recorded after imprisonment in 38 prisoners (27.3%) and were mostly addicted to cigarettes, ganja, heroine and alcohol. A Statistical significance difference was observed in median total EI score (Mann-Whitney U= 3840.5,P<0.000) and also in subscales of emotional intelligence such as Perception of emotions (Mann-Whitney U= 4662.5,P<0.000), Managing own emotions (Mann-Whitney U= 4468.5,P<0.000), Managing others emotions (Mann-Whitney U= 3933.5,P<0.000) and Utilization of emotions (Mann-Whitney U=5491,P<0.000).

**Conclusion/s:** Prisoners had significantly low emotional intelligence scores compared to general population. Implementation of emotional intelligence enhancement programs could potentially reduce imprisonment occurrence in society.

**Keywords:** Emotional intelligence, General population, Health status, Prisoners, Substance abuse

## **Preoperative Education about the Surgery and Anesthetic Methods of the Elective Surgical Patients in Teaching Hospital Anuradhapura, Has an Effect on the Level of Anxiety; Interventional Study**

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**Background:** Preoperative anxiety (PA) has an effect on the outcome of the anesthetic methods and the surgical procedures.

**Objective/s:** Ascertain the effect of preoperative education about their surgeries and anesthetic methods towards PA.

**Method:** Quasi experimental study was carried out participating 119 elective surgical patients in Teaching hospital Anuradhapura. PA was accessed day before (Pre-test) and 2 hours prior(post-test) to the surgery using two self-administered questionnaires. In every other day, YouTube video based Preoperative education was introduced to participants after conducting pre-test. Considering the preoperative education, participants were divided into interventional and control groups. Amsterdam Preoperative Anxiety and Information Scale (APAIS) was used as data collection instrument. Wilcoxon Signed-Ranks and Mann-Whitney tests were used to analyze data.

**Results:** Total sample size was 119 [Interventional=61(51.3%), Control=58(48.7%)] with mean age range of 49.3(SD=15.9). Wilcoxon Signed-Ranks Test indicated, medians of pre and post-test APAIS PA scores of interventional groups, 9.0 and 6.0 respectively (p=0.003); males (P=0.107) females (P=0.012). In the control group, 8.0 and 7.0(p=0.479). The medians pre and post-test APAIS need of information scores of interventional group as 10 and 5(p=0.000) while 7.0 and 6.0 in the control group (p=0.575). According to APAIS 105(88.2%) needed preoperative education. 9 (7.6%) have watched YouTube videos prior to pre-test. Pre-test anxiety level of while Female (Mann-Whitney U=3959.5) and Male (Mann-Whitney U=3180.5, p=0.004).

**Conclusion/s:** Preoperative education significantly reduces PA in the interventional group, comparatively higher in females. Although patients need more information about anesthetic and surgical procedures preoperatively, only few have gathered information themselves. Females are significantly anxious than males.

**Keywords:** Preoperative anxiety, Preoperative education, APAIS, Surgical procedures, Anesthetic methods

## Effects of Home-made *Hibiscus rosasinensis* tea on Post Prandial Blood Glucose Level Compared to that of Green Tea and Commercial Hibiscus tea; An Interventional Study

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**Background:** Hibiscus teas are made with *Hibiscus rosasinensis* and are expensive. Although these teas are marketed indicating hypoglycemic effects, scientific data lack on effect of *H.rosasinensis* on humans.

**Objective/s:** Objective of the study was to determine the effect of *H.rosasinensis* homemade flower water extract (HRWE) as tea on post-prandial blood sugar level (PPBS) of healthy individuals compared to green tea (GT) and commercially available Hibiscus tea (CHT–*H.rosasinensis*+Rosehip).

**Method:** Fasting and PPBS [after consuming a standard diet (StD-1045Kcal), StD+GT, StD+CHT and StD+HRWE on separate days] at 15, 30, 45, 60 and 120 minutes of healthy volunteers (n=14) were measured by glucose oxidase colorimetric assay method (ERC No:ERC/2018/44). Data were plotted on graphs, glucose concentration Vs time. Mean of incremental area under the curves (IAUC) was estimated. Data analyzed using SPSS.

**Results:** IAUC for GT, CHT and HRWE [2763(SD=1793.12), 2580(SD=1034.65) and 2977(SD=1224.11)] were significantly lower than IAUC of control [4758(SD=1762.18)]. No significant difference observed between GT, CHT and HRWE. Although not significant, 2hr-PPBS for GT, CHT and HRWE were lower than that of control. Compared to control, peak blood glucose reduction of 13.3%, 10.5% and 14.1% (SD=17.30, 15.39, 14.90) was observed for GT, CHT and HRWE respectively. Significant PPBS reductions at 30, 45 and 60 minutes of GT and CHT and 15, 30, 45 and 60 minutes of HRWE (p<0.05) observed compared to control.

**Conclusion/s:** GT, CHT and HRWE significantly lower PPBS of the standard meal. Effect possessed by HRWE on PPBS is comparable to GT and CHT.

**Keywords:** Blood glucose, Green tea, *Hibiscus rosasinensis*, Postprandial blood sugar

## **Behavioral and Emotional Symptoms among Institutionalized Adolescents in Institutions Registered at Child Protection Authority in Anuradhapura District: A Descriptive Study**

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**Background:** Globally 10-20% of adolescents were affected by mental-health problems. Institutionalized adolescents have been identified as a high-risk group.

**Objective/s:** To determine the prevalence of behavioral and emotional symptoms and to compare the prevalence in different models of institutions.

**Method:** A descriptive study was conducted at all (n=9) institutions registered at child protection authority in Anuradhapura district, in January, 2019. Culturally validated, self-administered versions of Strengths and Difficulties Questionnaire (SDQ), Impulsive-behavior Scale, Aggression Scale, Bullying-behaviour Scale were administered as interviewer guided self-administered questionnaires to all aged 11-19 years. Marks of the third-term examination of 2018 were extracted from student performance-reports.

**Results:** Sample consisted with 157 adolescents. Mean age 14.4 (SD 2.3) years and 113 were females (71.5%). Borderline and abnormal total difficulties scores were observed in 19 (14.8%) and 23 (18.0%) adolescents. Hyperactivity, emotional, conduct and peer-relationship problems were found in 40 (27.2%), 43 (29.0%), 50 (34.3%) and 38 (25.7%) adolescents. Normal scores for the prosocial behaviors were found in majority of adolescents, n=145 (96.0%). Mean score for conduct disorders was significantly higher in family based institution (3.5, SD-1.8) compared to others (2.6, SD-1.9), p=0.007 (t-test). Behavioral and emotional symptoms, except conduct disorders, were not different across adolescents in two models of institutions, p>0.05. Performance for main subjects were better in family based institution (mean-49.0%, SD-16.4) compared to others (mean-40.6%, SD-15.8), p=0.007 (t-test).

**Conclusion/s:** More than one-third of institutionalized adolescents have mental-health issues. Educational performances are better in adolescents in family-based institution. A study with bigger sample is important.

**Keywords:** Institutionalized-adolescents, Mental-health, Impulsivity, Bullying, Aggression

## **Assessing the Knowledge of Pregnant Women in Urban and Rural Anuradhapura on Selected Antenatal Care that They Should Receive**

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**Background:** Published data on the knowledge of pregnant women of Sri Lanka about proper antenatal care is scarcely available.

**Objective/s:** To assess the knowledge of pregnant women in urban and rural Anuradhapura on selected antenatal care that they should receive.

**Method:** A clinic based descriptive cross-sectional study was conducted in two MOH areas: urban and rural, based on pretested, self administered questionnaire, among the pregnant women attending the antenatal clinics.

**Results:** Urban study sample included 117 participants and rural included 102. 107(90.7%) of urban and 96(93.2%) of rural women had inadequate knowledge on when they should attend the first antenatal clinic, which showed statistically significant association with the educational status of women in both urban ( $p=0.043$ ) and rural ( $p=0.029$ ) settings. Both urban (92.4%) and rural (90.3%) women had adequate knowledge about physical tests. 79.0% of urban women had adequate knowledge about laboratory tests done in the booking visit, only 48.5% of rural women had that knowledge. 39.0% of urban and 30.1% of rural women knew about the dating scan while 4.2% of urban and 1.0% of rural knew about the anomaly scan with correct pregnancy periods when those should be done. 37.3% of urban and 44.7% of rural women knew when to do the OGTT.

**Conclusion/s:** The knowledge of pregnant women in urban and rural Anuradhapura on some aspects of antenatal care such as first antenatal visit, dating scan, anomaly scan, OGTT is low. Implementing an appropriate educational program aiming to improve the maternal knowledge on antenatal care is suggestive.

**Keywords:** Antenatal-care, Knowledge, Pregnant women, Rural, Urban

## **Attitudes of Health Staff in Selected Primary, Secondary and Tertiary Care Centers, Medical and Nursing Students Towards Self-harm Patients in Anuradhapura District**

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**Background:** Anuradhapura district have been having very high annual population incidence of self-harm. The quality of care is depends on the attitude of the healthcare-workers.

**Objective/s:** To determine attitudes of healthcare-workers and trainees on self-harm patients. And, to compare the attitudes across the different categories of healthcare-staff in different healthcare settings.

**Method:** A cross-sectional study was conducted in January, 2019. All the doctors, nurses and attendants, in Emergency Treatment Units, Medical and Psychiatry wards in Teaching-Hospital Anuradhapura, Base-Hospital Thambuttegama, District-Hospital Nochchiyagama and Kekirawa, were recruited. In addition, randomly selected sample of students representing all batches of Nursing Training School, Anuradhapura, and Faculty of Medicine and Allied Sciences, Rajarata University, were recruited. Modified, self-administered, version of Attitude Towards Attempted Suicide Questionnaire was used for data collection.

**Results:** Sample consisted of 21-Doctors, 88-Nurses, 50-Attendants, 202-Medical Students and 184-Nursing Students. Respectively, 19.0%, 13.6%, 18.0%, 3.5% and 3.3% reported a satisfactory attitude. Females reported a better attitude on discrimination compared to males,  $p=0.008$ . Doctors showed better attitude on positivity, acceptability, religiosity, discrimination, professional role and care compared to Nurses and Attendants,  $p<0.05$ . Medical students reported better attitude on discrimination, professional role and care compared to nursing students,  $p<0.05$ . Professional role and care attitude was better in secondary and primary care institutions compared to tertiary care institution,  $p<0.05$ . Discriminative attitude was higher in Psychiatry ward staff compared to Medical ward,  $p<0.05$ .

**Conclusion/s:** Satisfactory positive attitude is present in 15.7% of healthcare-workers and 3.4% of trainees. More emphasis on suicidology should be paid in training healthcare-workers.

**Keywords:** Self-harm, healthcare-worker, Attitude, Medical-students, Nursing Students

## **Change in Body Mass Index in Medical Students of Rajarata University within Two Years and Association with the Diet and Physical Activity**

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**Background:** Obesity and lack of physical activities are a major concern among medical undergraduates due to the changes in the dietary pattern and physical activities that take place after entering the university.

**Objective/s:** The objectives were to determine the BMI changes in medical students within two years, compare them, determine the association between BMI changes and the dietary habit changes over 2 years and to determine the association between BMI changes and physical activity changes in medical students of Rajarata university over 2 years.

**Method:** A retrospective cohort was conducted on a sample of medical students of 9<sup>th</sup> and 10<sup>th</sup> batches of Rajarata university. Their heights and weights were measured using a stadiometer and a digital weight scale respectively. A structured self-administered questionnaire was provided to evaluate the food pattern and physical activity

**Results:** Second BMI values are significantly higher than previous values with a significance less than 0.001 (paired T test is applied). BMI increase in males is higher than that of females with significance of 0.022. Frequency of meals do not show a significant association with the BMI change. Regularity of taking snacks and oily food show significant association with BMI change with P values respectively 0.044 and 0.003. There was no correlation between physical activity and change in BMI.

**Conclusion/s:** BMI has increased significantly within the population. It is significantly correlated with oily food intake. There was no significant association between BMI change and physical activity.

**Keywords:** BMI change, Dietary pattern, Physical activity, Medical students

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3. P B H S M Sepala
4. D M D T Kasunsiri
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12. H A C P Hapuarachchi
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14. R M S H Wageesha
15. V S S Soysa
16. K J A D Buddhika
17. D M D Gayesha
18. D V A T Rasanga
19. D M M Suraweera
20. J M C J Bandarra
21. E G D P Thilakarathna
22. M E M T Fernando
23. P G K M Wimalarathne
24. R I Premarathne
25. K G N M Bandara
26. D M A C Dissanayake
27. M A D N Marasingha
28. S A T Madhuwantha
29. H S U Ranasingha
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31. W M P S Dias
32. M K M T Karunarathne

