General Sir John Kotelawala Defence University
Sri Lanka

KDU IRC
INTERNATIONAL RESEARCH CONFERENCE

ABSTRACTS

"Implementing Multidisciplinary Research for Interdisciplinary Health Care''

11TH INTERNATIONAL
RESEARCH CONFERENCE

Securing Professional Excellence through Collaboration
13th - 14th SEPTEMBER 2018

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MESSAGE FROM THE SECRETARY TO THE MINISTRY OF DEFENCE

It is with great pleasure that I am issuing this message to the International Research Conference 2018 of the General Sir John Kotelawala Defence University (KDU) as the Secretary to the Ministry of Defence and the ex-officio Chairman of the Board of Management, KDU.

I wish to place on record my sincere appreciation to KDU for playing a leading role in molding the future of the military as well as civilian youth who are in pursuit of high quality tertiary education in Sri Lanka. Today, KDU has gained recognition as an excellent seat of learning and disseminating knowledge that empowers attitudes and develops skills of the young graduates. It also contributes immensely to the much needed research and innovation.

KDU IRC is an annual event in its calendar eagerly anticipated by many due to the significance it holds in providing a platform for both local and international intelligentsia to congregate, confer and disseminate knowledge. I am sure that, under this year's theme, securing professional excellence through collaboration, the conference will encompass a wide range of topics that are of utmost benefit for potential scientific and socio economic advancement in Sri Lanka.

While expecting to see great minds from all over the world meet and share their thoughts and knowledge at this event, once again I express my sincere appreciation to the Vice Chancellor and KDU staff for the enthusiasm and commitment shown towards making this scholarly experience a memorable one for its participants.

I wish that this international research conference would be highly productive for all participants – a conference that enriches the much needed research culture to ensure the nation's growth enabling to face its future challenges.

Kapila Waidyaratne
President's Counsel
Secretary

MESSAGE FROM THE VICE CHANCELLOR

I am delighted that we have been able to organize the 11th International Research Conference of General Sir John Kotelawala Defence Univeresity (KDU IRC – 2018) conducted on the overarching theme, "Securing Professional Excellence through Collaboration" and convened over two days, 13th and 14th September 2018 at the university premises. Hence, it is with great pride that I pen down my thoughts on this Abstract Book of KDU IRC-2018.

KDU IRC-2018 is a world class forum that brings professionals and researchers of various disciplines to a common platform to disseminate their valuable research findings. They are able to present, discuss and deliberate their research findings with peers and experts, both local and international, as well as engage in lively discussions on contemporary matters. The resource personnel of the conference are eminent Sri Lankan and foreign researchers, academics and professionals with international recognition including those of our own staff at KDU.

We are proud to have internationally eminent, Sri Lankan born scientists, such as, Prof. Mohan Munasinghe and Dr. Sarath D. Gunapala, as guest speakers at the inauguration of the conference. They have made our motherland proud in the international arena as renowned experts and intellectuals in their respective fields. Further, this conference is enriched with the participation of many local and foreign academics in varied disciplines; along with personnel from the tri-services and the police, thus making our conference the only research conference in Sri Lanka that brings together civilian professionals and their counterparts in security forces.

What is special about this conference is that the research papers are automatically uploaded to Google Scholar with H-Index Citations. The best papers are published in journals and others as proceedings. In addition, provision is given for live telecast of oral presentations through YouTube, and presentations on Skype, for international authors. The plenary sessions, pre/post-conference workshops and oral and poster presentations, would no doubt generate productive discussion and constructive criticism which would in return instigate thoughts for development in future.

I wish to record our gratitude to the Ministry of Science, Technology and Research and the National Science Foundation, not forgetting the Ministry of Defence, for their consistent support in co-organizing our conference, and my sincere appreciation of the academic and administrative staff of KDU together with our well-wishers for their invaluable contribution towards the success of this mammoth event.

Finally, I wish you, the presenters, good luck with your scholarly presentations at KDU IRC-2018 and the participants a memorable and thought provoking experience.

JJ Ranasinghe VSV, USP, psc, MSc (DS) Mgt
Rear Admiral
Vice Chancellor

MESSAGE FROM THE CONFERENCE CHAIR

On behalf of the Executive Committee, I am honoured and delighted to welcome you to the 11th International Research Conference of General Sir John Kotelawala Defence University (KDU IRC-2018); bearing the theme, Securing Professional Excellence through Collaboration. Over the past 11 years, KDU IRC has grown to be a major international research conference, continuing with its tradition of high-quality and broad international participation in all areas of research. Hence, it is a pride and honour to preside over this prestigious research conference in Sri Lanka.

I am very pleased to welcome you to KDU IRC-2018 which is based on fundamental concerns to all scientists and non-scientists alike. This conference also enables the exchange and dissemination of useful information on multilateral initiatives. Therefore in bringing us together, KDU IRC -2018 allows to seek out and forge new partnerships, and to engage relevant sectors in advancing the social and economic well-being of mankind.

KDU is gratified to have a line-up of highly renowned keynote and plenary speakers consisting of experts who would shed light on research and issues. In addition, this is an opportunity for undergraduates, researchers and practitioners to share their research and contribution towards the success of the respective professions, through oral and poster presentations.

The successful organization of KDU IRC -2018 required the talents, dedication and invaluable time of many academic and administrative staff of KDU, volunteers and strong support from our sponsors; the Ministry of Science, Technology and Research, and the Ministry of Telecommunication, Digital Infrastructure & Foreign Employment. Special gratitude and appreciation goes to the Presidents, Coordinators and the members of the numerous committees of the faculties. Without their wise advices and suggestions; outstanding organization, planning and performance, we would not have had such an excellent conference.

I hope KDU IRC -2018 would offer the participants a platform to exchange ideas, discover novel opportunities, reacquaint with colleagues, meet new friends and broaden their knowledge.

Dr Upali Rajapaksha
Conference Chair
11th International Research Conference

MESSAGE FROM THE PRESIDENT OF THE SESSION

The faculty of Allied Health Sciences Session of 11th annual International Research Conference (IRC) of General Sir John Kotelawala Defence University, Sri Lanka has been organized to suite the main theme of "Implementing Multidisciplinary research for interdisciplinary health care". This session comprises of five plenary speeches delivered by distinguished national and international scientists. It provides a forum for the discussion of advances in recent research in the field of Allied Health Sciences which will cover the areas such as Nursing and Midwifery, Radiography & Radiotherapy, Pharmacy, Physiotherapy, Medical Laboratory Sciences. During this session the students and young researchers will get the good opportunity to meet the leading specialists in the above areas. Plenary session of Allied Health Sciences will feature speeches in five emerging scientific topics which will be; "Multi-Modal Neuroimaging with MRI ", "Restraining Multi-Drug Resistant Bacteria Through Medicinal Plants", "Current trends in Medical Education", "Developing Multidisciplinary Research for Diabetic Care: Lessons Learned", and "A Journey of International Collaborations to understand Dengue Infections".

The call for papers had an overwhelming response. Researchers from all over the country submitted about hundred papers for this session and the specialists in the relevant fields reviewed them and selected the best into oral and poster presentations. The oral presentations are conducted in two parallel sessions and from five areas including Nursing and Midwifery, Radiography & Radiotherapy, Pharmacy, Physiotherapy, Medical Laboratory Sciences. It is expected that the conference proceedings will serve as a comprehensive compilation of the present knowledge and experience and will be used by researchers who are concerned with the subjects presented at the faculty of Allied Health Session of 11th annual IRC of General Sir John Kotelawala Defence University, Sri Lanka.

On behalf of the Committee of the Allied Health Sciences Session of IRC, I wish to thank all the authors, invited plenary speakers, abstract reviewers, chairpersons of the sessions, judges of the session, session coordinators, members of the abstract reviewing committee, and numerous others who helped to shape the content of this session.

Lt Col (Dr) MDAS Gunatilleke
President
Faculty of Allied Health Sciences

Plenary Session

MULTI-MODAL NEUROIMAGING WITH MRI

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Advances in medical imaging have had a huge impact on patent wellbeing, with neuroimaging arguably having the most. The ability to see inside and "read" a living human brain is becoming increasingly sophisticated.

A neuroimaging method could be defined as any technique that allows human (or animal) brain structure, function or metabolism to be studied, preferably in vivo. The most widely used methods are computed tomography (CT), electroencephalography (EEG), positron emission tomography (PET), and magnetic resonance imaging (MRI). Of these four methods, MRI is the only one to allow assessment of brain structure, function and metabolism in a minimally invasive, patient friendly way.

MRI can be used to diagnose stroke and is especially useful in diagnosing ischemic strokes, and combined with angiography, or MRA, can be useful in diagnosing brain aneurysms. It can often be used to help diagnose abnormalities in brain structure, such as birth defects, developmental deformities or cerebral palsy, revealing both macroscopic and microscopic changes.

MRI can be useful in diagnosing brain cysts and tumours, especially very small ones or those that are in areas that other imaging techniques like CT scan cannot visualize well. Sometimes a special dye may be injected into the brain before the MRI to help view differences in the adjacent areas of brain tissue. This allows physicians to locate hard-to-find brain tumours and cysts that cannot be located by other means.

MRI is superior to other forms of imaging for diagnosing certain brain infections or conditions that result in inflammation of the blood vessels called vasculitis. MRI is also very important in the diagnosis of multiple sclerosis where it can detect the condition in up to 95 percent of the people who have it. While MRI scans alone cannot be used to diagnose conditions such as Alzheimer disease or Parkinson disease, they are useful in visualizing the brain changes in these disorders and assisting in their diagnosis.

Over the last few years, neuroimaging techniques have also contributed greatly to the identification of the structural, functional and metabolic neuroanatomy of psychiatric disorders. A network of brain regions, including the dorsal prefrontal cortex, ventral prefrontal cortex, anterior cingulate gyrus, amygdala, hippocampus, striatum, and thalamus has been revealed in the pathophysiology of depression.

The move towards personalised medicine is likely to become a reality through the use of a holistic, multi-modal, approach to neuroimaging.

RESTRAINING MULTI-DRUG RESISTANT BACTERIA THROUGH MEDICINAL PLANTS

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Antibiotics kill bacteria or prevent them from multiplying. Antibiotic resistance among bacteria occurs when an antibiotic loses its ability to control and kill bacterial growth. Antibiotic resistance is a survival trait of bacteria. Some bacteria develop resistance to many antibiotics becoming multidrug resistant (MDR) strains. New antibiotics are required to treat infections caused by MDR bacteria. The World Health Organization has recently announced the urgent need to develop new antibiotics to combat 12 MDR bacterial pathogens. However, many pharmaceutical companies are terminating their research and development endeavours on new antibiotics. Combination therapy using more than one antibiotic is a viable option to manage drug-resistant bacteria. Other approaches such as vaccines and bacteriophages will also be useful to maintain the efficacy of current and new antibiotics. Another strategy is to restore or enhance the activity of antibiotics against drug-resistant bacteria by using the antibiotics together with compounds that inhibit resistance mechanisms. Some plant compounds have shown considerable resistance-modifying activities *in vitro*. Crude extracts of some medicinal plants have also been effective in potentiating the activity of commonly used antibiotics against drug-resistant bacteria. The use of plant compounds and their combinations, together with common antibiotics, is a powerful strategy to mitigate the problem of antibiotic resistance. The potent combinations of plant compounds and antibiotics determined from *in vitro* experiments could be assessed by *in vivo* studies to determine the clinical relevance of such combinations.

CURRENT TRENDS IN MEDICAL EDUCATION

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Health professions education is a dynamic process which should response positively to cater the changing needs of the healthcare and the expectations for the public. On the other hand, it should evolve with growing evidence on educational theory. Around the world, the transformation of curricula, assessment and teaching learning methods are taking place and certain trends have been emerged as a result.

In the past, the focus of health professions education was to provide knowledge and skills for professional practice. Even the development of attitudes was a by-product. However, today, the focus of healthcare professions education is fostering a professional with clinical and moral reasoning skills for decision making, and intrinsic motivation for reflective practice and life-long learning.

Accordingly, curricula are designed to improve students' ability to deal with uncertainty and their intrinsic motivation. Expanding the opportunities of providing feedback to students and engagement of students in the learning process have become the primary drivers of curriculum planning. In the delivery of the curriculum, learning methods are increasingly used and teaching methods are made more student centred. Teaching and learning methods attempt to highlight the relevance of learning and, therefore, they take place in more authentic learning environments. Technology is use for many purposes including the individualization of learning to students with different learning styles. Assessments are focused on promoting higher order-thinking and not the ability to retrieve knowledge. While appreciating the importance of 'assessment of learning', the gap between learning and assessment has been bridged by integrating 'assessments for learning'. Overall, 'what professionals can do' more than 'what they know' has become the emphasis of the educational process with the objective of 'formation of professional identity' rather than 'producing a professional'.

DEVELOPING MULTIDISCIPLINARY RESEARCH FOR DIABETIC CARE: LESSONS LEARNED

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The prevalence of type 2 diabetes among adults is increasing worldwide. Multi-disciplinary research is becoming increasingly commonplace in diabetic research. In many healthcare systems globally, diabetic care is driven by multidisciplinary diabetic teams. A large number of studies in the past few years and across different countries have been performed to better understand how these teams work and how they manage diabetic patient care. In order to curb the rising epidemic, novel disease management strategies are needed with a focus on care organization, delivery and patient and family behavioural modification. These challenges are best approached by an organized, multidisciplinary health care team focused on delivering high-quality patient care.

The aim of this presentation is to provide an evidence-based summary of the use of multidisciplinary research in diabetic care in a developing country. The presentation discusses appropriate use of multidisciplinary research involving clinicians, nurses, complementary medicine practitioners', patients and family members in diabetes care. In particular, how multi-disciplinary health research teams can be used to improve diabetic care. A range of factors pertaining to teamwork, perspectives of different disciplines, availability of patient information, can affect how well multidisciplinary diabetic teams are implemented within diabetic patient care. This presentation concludes with practical possibilities of conducting multidisciplinary research to provide better patient care in Sri Lanka.

A JOURNEY OF INTERNATIONAL COLLABORATIONS TO UNDERSTAND DENGUE INFECTIONS

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Dengue infections have been common in Sri Lankan since 1989 when the first epidemic of >1200 cases, was reported by the Ministry of Health (MoH). My work in dengue began after I returned to Sri Lanka in 2007 and oversaw the laboratory component of the Pediatric Dengue Surveillance project in collaboration with the MoH. Then in collaboration with Prof Alex Sette and Prof Aravinda de Silva of the US, a National Institutes of Health (NIH)- USA, funded project was initiated to expand the knowledge of the human T cell response against dengue in the context of the larger immune response. Lymphocytes being discarded from blood donors at the National Blood Bank, Sri Lanka, were used after ethical review committee and MoH approvals to identify possible new epitopes in the context of the Sri Lankan population. The lymphocytes were screened for past dengue infections and used to validate the 8000+ potential peptide pool generated using bioinformatics. Validating the peptides by testing lymphocytes from past dengue infected blood donors added ~300 new dengue T cell epitope peptides to the literature. One major discovery highlighted the importance of the dengue non-structural proteins in the T cell immune response against dengue infections. This new pool of peptides has been used to study the immune responses being generated by new dengue vaccines. Our data suggest that the non-structural (NS) proteins of dengue are largely responsible for the human T cell response and this may explain the lack of protection in the recently WHO approved Dengvaxia dengue vaccine, which lacks the dengue NS proteins. Furthermore, our data show that the immune response from the yet to be approved NIH/Butantan vaccine is similar to the natural infection and may provide better protection. In addition, this international project has helped understand the role of T cells in the overall human immune response in controlling a dengue infection.

Technical Sessions

RISK FACTORS FOR ROAD TRAFFIC ACCIDENTS AMONG DRIVERS ADMITTED TO TEACHING HOSPITALS KANDY AND KURUNEGALA IN 2017

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Road Traffic Accidents (RTA) highly contribute to morbidity and mortality worldwide. RTAs are one of the main causes of sudden deaths in Sri Lanka. Therefore, the objective of this descriptive cross-sectional study was to identify the risk factors for RTA among drivers admitted to Teaching Hospitals in Kurunegala and Kandy in 2017. The study considered 360 drivers (Kurunegala = 242, Kandy =118) admitted to the accident wards due to RTAs. Information related to the demographic, occupational, vehicle, road and environment, nature of injury were collected from all individuals using an interviewer administered questionnaire. Male drivers (97%) aged between 26-35 years (28.9%) were mainly affected and motorcycles contributed to over 79% of total accidents. 47.8% of drivers had less than 10 years driving experience and 32.5% affected RTA were while travelling at a speed between 31 and 45 km/h, 27.8% in 46-60 km/h. The majority occurred between 6pm-12pm (31.11%) in the day and 23% of RTAs occurred on Fridays of the week. Limited contribution occurred while driving with alcohol (6.9%) and with technical faults (8.0%). Over 54% of the drivers had slept less than 8 hours in the previous day of the accident. Condition of the road was not reported as a reason for accidents and 61% had RTAs on carpet roads. Lower limbs were commonly injured (40%) and nearly 60% of the drivers who had faced motorcycle accidents had injuries in legs, hands or head. Significant associations showed between speed of the vehicle and driving experience of drivers (p< 0.05), type of the vehicle and the site of the injury (p< 0.05), type of the vehicle and age of the driver (p< 0.05), speed of the vehicle and type of the road (p< 0.05) at the time of the accident. The study concluded that the high risk of RTAs was among young male drivers in the 26–35 years age range and motorcycles was the most contributed vehicle in the study population. Rush hours with low day light (evening to midnight) were more vulnerable for RTAs mainly on Friday. However, a number of drivers with serious injuries or deaths were excluded from the data collection. Further studies on RTA are suggested and a proper education program should be implemented by addressing identified risk factors to minimize RTA related injuries.

Keywords: Road Traffic Accidents, Risk Factors, Drivers, Injuries

VALIDITY AND RELIABILITY OF THE MULTIDIMENSIONAL SCALE OF PERCEIVED SOCIAL SUPPORT (MSPSS) IN CANCER PATIENTS

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Social support (SS) is considered an important component in cancer patients' quality of life. The measurement and evaluation of SS in cancer patients is not well understood in the Sri Lankan context. This study examined the Sinhala version of the Multidimensional Scale of Perceived Social Support (MSPSS) for its psychometric properties. The scale has 3 dimensions; family (FA), friends (FR), and significant others (SO) support. The research was approved by the Ethics Review Committee, Faculty of Medicine, Galle. A total of 40 cancer patients at the Radiotherapy unit, Oncology ward, Teaching Hospital, Karapitiya in Southern, Sri Lanka were enrolled on 'first come-first serve' basis using their appointment register in 2013. Participants were asked to complete three scales; the MSPSS, the Centre for Epidemiological Studies – Depression scale (CES-D) and the World Health Organization-Quality of Life-Brief scale (WHOQOL-BREF). In addition, their socio-demographic data were recorded. To test-retest reliability of the scale, the same group of participants were asked to fill the same scales two weeks later. Results were regarded as statistically significant if $p < 0.05$. Mean ($\pm$SD) age of the sample was 61($\pm$12) years. Mean score ($\pm$SD) for overall SS was 65($\pm$7). The Sinhala-MSPSS was found to have a negative correlation with the CES-D (divergent validity), but was positively correlated with the WHOQOL-BREF (convergent validity). The internal consistency of the overall scale was good (Cronbach's alpha - 0.75). FA and SO showed high Cronbach's alpha (0.983 and 0.996). The test-retest reliability was found to be 0.86. The study concludes that the Sinhala version of MSPSS is a valid and reliable tool to assess SS of cancer patients.

Keywords: Social Support, Multidimensional Scale of Perceived Social Support, Validity -Reliability

EXPOSURE TO PATIENT RELATED VIOLENCE AGAINST NURSING OFFICERS IN DIFFERENT UNITS, IN TEACHING HOSPITAL KARAPITIYA (THK)

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The healthcare industry has been identified as one of the work places where violence is most prevalent and nursing has been identified as the occupation at highest risk of patient-related violence. Patient-related violence in the health care system is increasing, and it strongly influences recruitment and retention of nurses. The objectives of this study were to determine the exposure to patient related-violence against nursing officers working in THK and to compare the prevalence of patient-related violence against nursing officers in different units of THK. A descriptive survey design was used. Setting was Teaching Hospital Karapitiya. Study sample was selected from all units in THK using systematic random sampling method. Data was collected using interviewer-administered questionnaire. Of 136 respondents, 88 (64.7%) were exposed to some kind of violence with (n=34) 25% to physical assault, (n=77) 56.6% to verbal abuse, (n=12) 8.8% to verbal threat, (n=13) 9.6% to sexual harassment. There was a significant relationship (p> 0.026) between the exposure to violence and the type of wards in THK, the highest rate 85.2% (n=115 nurses) being in special units with surgical and medical units having rates of 65.9% (n=89) and 55.9% (n=76) respectively. Only 33.8% (n=46) of participants were aware of the availability of violence reporting procedures in their workplace. The rates of exposure to violence among nurses in THK are fairly high. There is a direct need to create awareness regarding the availability of reporting procedures and a regular program for training in violent patient management.

Keywords: Violence, Nurses, Physical Assault, Sexual Harassment, Verbal Abuse, Verbal Threat

KNOWLEDGE, ATTITUTE AND PRACTICES OF DIETARY MANAGEMENT AMONG ISCHEMIC HEART DISEASES (IHD) PATIENTS

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Ischemic heart disease (IHD) has become a major cause of deaths in the world. Unhealthy dietary pattern is an indirect risk factor which causes obesity, hyperlipidemia and high blood pressure. Assessment of knowledge, attitudes and practices related to dietary management is important to prevent unnecessary deaths due to IHD. Therefore a cross sectional study was conducted to evaluate the knowledge, attitude and practices in dietary management among IHD patients using 150 patients who attended medical and cardiology clinics in Teaching Hospital Karapitiya by using an interviewer administered questionnaire. Considering their knowledge about the disease condition, nearly 40% of them had good knowledge about IHD. Similarly, 45.3% had good knowledge about dietary management. Fifty one percent of the sample was willing to have dietary management but only 27% in salt and 50% in fat like to reduce them. Knowledge and attitude about dietary management have significant relationship between level of education (know. - $r = 0.48$, $p < 0.001$, Atti. – $r = 0.44$, $p < 0.001$) and monthly income (know. – $r = 0.35$, $p < 0.001$, Atti. – $r = 0.27$, $p < 0.001$). Nearly 70% did not like to reduce salt intake while 50% did not like to reduce fat. Nearly 75% agreed to increase vegetable and fruits intake. There was a significant relationship between fruits and vegetables usage and level of education ($r = 0.64$, $p < 0.001$) , monthly income ($r = 0.31$, $p < 0.001$) and nationality ($r = - 0.25$, $p = 0.002$). Even after diagnosis of the disease a 62% in salt, 43% in fat and 87% in fruits and vegetable did not change the dietary pattern.

Keywords: Dietary Management, Ischemic Heart Disease Patients, Knowledge

AWARENESS REGARDING EARLY DETECTION TECHNIQUES OF BREAST CANCER AND KNOWLEDGE REGARDING SIGNS AND SYMPTOMS OF BREAST CANCER: COMPARATIVE STUDTY BETWEEN BREAST CANCER PATIENTS OF APEKSHA HOSPITAL AND WOMEN WHO ATTENDED CLINICS, PILIYANDALA MOH

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Breast cancer is a type of cancer that develops from breast tissue and is considered the most common cancer among Sri Lankan women. The objectives of this research were to assess the awareness regarding early detection techniques of breast cancer and the knowledge regarding signs and symptoms between two different groups. A descriptive cross sectional comparative study was conducted between two groups and the study was carried out in the clinics of Apeksha Hospital Maharagama and at well woman clinics in MOH area Piliyandala. Each cohort consisted of 317 participants within the age range of 30-65. They were selected randomly and data collection was done using a self-administered questionnaire. Data analysis was done using SPSS version 23. Among the women in Apeksha hospital, the most known early detection technique (EDT) was clinical breast examination (CBE) (91.80%). The least known EDT was magnetic resonance imaging (MRI) which was found to be 62.80%. In the MOH, the most known EDT was breast self-examination (BSE). It was 80.10% and least known EDT was Mammography (32.80%). Most identified sign and symptom for both study samples was lump or thickening in the breast. It was 93.40% for Apeksha cohort and 79.50% for MOH cohort. When comparing the study samples, the sample of Apeksha Hospital, Maharagama had fairly good knowledge about signs, symptoms and early detection techniques. Therefore, the knowledge regarding signs and symptoms should be improved among the women in MOH areas. Throughout the entire study the average practice and knowledge of women with breast cancer was maintained at a precise level than the women who attending MOH clinics. The awareness of women participating MOH clinics must be improved by introducing health education programs at the clinics.

Keywords: Awareness, Breast Cancer, Comparative Study, Early Detection Techniques (EDT), Signs and Symptoms

KNOWLEDGE AND UNDERSTANDING OF THE WEIGHT FOR AGE CHART IN THE CHILD HEALTH DEVELOPMENT RECORD AMONG MOTHERS OF INFANTS OVER SIX MONTHS IN PILIYANDALA MOH AREA

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Child Health Development Record (CHDR) is a document which records growth and development details of a child from birth to adolescence. It is a tool which makes parents actively participate in and develop a greater understanding of their child's growth. Growth charts in CHDR are important in monitoring the growth of children. In the current CHDR, growth charts are color coded for easy parental understanding and interpretation. There are separate charts for weight, length/height and head circumference for boys and girls. In children, weight is the most common measured indicator for assessment of growth. Hence, accurate understanding of the weight for age chart and growth patterns is necessary for parents to understand the child's growth and detect problems early. The objective was to assess knowledge and understanding of the weight for age chart and growth patterns in CHDR among mothers of infants in Piliyandala MOH area. A descriptive cross-sectional study was conducted at seven randomly selected child welfare clinics in Piliyandala MOH area. Study population comprised of mothers of infants over 6 months. A pre-tested interviewer administered questionnaire and a series of marked and unmarked weight for age charts were used as tools. Out of the total number of mothers (n=189) interviewed, approximately half (52.4%) (n=99) had average knowledge and 14.3% (n=27) of mothers had poor knowledge on weight for age chart in CHDR. Nearly half the population (46.6%) identified the colour zones of the weight for age chart in CHDR correctly. Two thirds (67.7%) of mothers identified growth patterns parallel to the median line as healthy growth. However, only 21.2% identified weight gain of a low birth weight baby parallel to the median but at the -2SD line as an acceptable growth pattern in weight for age chart. About 1/3 of mothers misinterpreted rapid weight gain of a low-birth weight as a healthy pattern. Majority of mothers had satisfactory knowledge and understanding of the weight for age chart in CHDR. However, their interpretation was not optimal with a preference for upward moving growth patterns indicating their desire for a "fat" baby rather than a "thin" baby.

Keywords: Child Health Development Record (CHDR), Infants

PHYSICAL ACTIVITY AND PREVALENCE OF OBESITY AMONG ADOLESCENTS IN KURUNEGALA DISTRICT

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Many studies have identified the relationship between Body Mass Index (BMI) and physical activity level. The purpose of this study was to identify the prevalence of underweight, overweight and obesity and to examine the relationship between BMI and physical activity level of 16-18 year old adolescents in Kurunegala district. A cross-sectional study was conducted. Four hundred and twenty students (205 males and 215 females) were selected using stratified random sampling technique. Data was gathered using the physical activity questionnaire to measure the physical activity level. BMI categories of overweight, obesity, normal weight, thinness and severe thinness were determined based on WHO growth reference. Descriptive statistics, Mann Whitney U test and Spearman correlation tests were used to analyze data. The results revealed that the percentages of students in normal, underweight, over-weight and obese categories were 62.1%, 31.9%, 4.5% and 1.4%, respectively. Also, a significant difference ($P<0.05$) of physical activity level was observed between children in urban and rural areas. There was no correlation between BMI and physical activity level of students in Kurunegala district ($r=0.015$, $p=0.766$). It can be concluded that there is no relationship between BMI and physical activity level of students in Kurunegala district and there were more underweight students than overweight and obese students. Also, underweight adolescents can be found in both urban and rural areas and prevalence of obesity was higher in urban areas.

Keywords: Physical Activity Level, BMI

GOVERNMENT BANKERS LEAD A SEDENTARY LIFE STYLE WITH TENDENCY FOR PHYSICAL INACTIVITY: MYTH OR A FACT?

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Cardiovascular diseases (CVDs) are the foremost cause of deaths globally. Over three quarters of CVD deaths occur in low and middle-income countries. Bankers are known to have a sedentary lifestyle with physical inactivity which is a known risk factor for CVDs. The objective of the study was to assess the level of physical activity of government bankers. A descriptive cross-sectional study was carried out in 25 selected branches of a government bank in Western Province, Sri Lanka. Managerial and officer grade participants were recruited through simple random sampling. Level of physical activity was assessed using an interviewer - administered structured questionnaire. Physical activities were categorized as strenuous (brisk walking, jogging) and mild to moderate (house work, walking, gardening). Strenuous exercise of more than 2 hours per week and mild to moderate exercise of more than 18 hours per week were considered as satisfactory. Data were collected from 403 bankers, males (n=113; 28%) and females (n=290; 72.0%) belonging to 25-45 age group. Only 212 (52.6%) have engaged in satisfactory level of physical activity. Among them, 49 have been involved in strenuous physical activity but have failed to show any statistically significant association with age (p=0.446), gender (p=0.519) or with occupational status (p=0.156). 163 (40.4%) were involved in mild to moderate physical activity, the majority were females (n=127) and statistically significant association was shown with gender (p=0.028). In conclusion, there is a need to implement life style changes in government bankers in Western Province to sustain a satisfactory level of physical activity.

Keywords: Cardiovascular Diseases, Risk of CVDs, Government Bankers, Physical Inactivity, Western Province

NURSES' PERSPECTIVE ON LEADERSHIP QUALITIES OF NURSE MANAGERS

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Nurse managers' decision making ability, communication skills and commitment to the profession directly and indirectly affect nurses' job satisfaction and thereby the quality of patient care. The aim of the study was to explore nurses' perception on leadership qualities of their nurse managers. This was a descriptive cross-sectional study conducted among purposively recruited nurses from both medical and surgical wards in the National Hospital of Sri Lanka in early 2017. Data were collected from 251 nurses using a pre-tested self-administered questionnaire. Ethical approval was obtained for the study. According to their perception, only 65.3% nurses believed that the nurse managers use effective communication skills in their management, while 64.6% agreed that their decision making ability is good. Among participants, 69.8% positively responded regarding their job satisfaction and 67.3% nurses thought that their nurse managers were committed to the profession. Further, nurses responded at moderate levels on their nurse managers' qualities including equality (61%), appreciation (66%) and flexibility in duty arrangements (73%). According to nurses' perception, nurse managers' leadership qualities including effective communication skills, decision making ability and commitment to the nursing profession were at moderate level. As nurse managers' qualities influence both patients and staff, it is essential to organize educational programmes for the nurse managers to improve their leadership qualities, and thereby to improve the quality of patient care and outcome.

Keywords: Nurses' Perspective, Nurse Manager, Leadership Qualities

EVALUATION OF AXILLARY DOSE OF CARDIOLOGIST DURING CORONARY ANGIOGRAPHY (CA) AND PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY (PTCA) PROCEDURES: A CATH LAB STUDY

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Coronary Angiography (CA) and Percutaneous Transluminal Coronary Angioplasty (PTCA) are catheterization imaging procedures involving high radiation doses. The aim of this study was to measure the absorbed dose receives in the axillary region among cardiologists who wear a lead apron with inappropriate size. This was a quantitative cross-sectional study, which includes the date from 40 PTCAs and 80 CAs. The data were collected from National Hospital of Sri Lanka (NHSL). Two electronic pocket dosimeters were placed in the axillary area (inside and outside the lead apron) of the cardiologist, which was used to measure scattered and leakage radiation during imaging procedures. PTCA and CA median axillary dose without and with shielding was 25.84 μSv, 0.64 μSv and 9.37 μSv, 0.64 μSv. A significant difference was observed between with and without shielding. First operator will receive annum dose with respect to the without and with shielding to axilla 13.88 mSv and 0.85 mSv respectively, 93.9% of reduction was observed. Among PTCA and CA procedures, a significant association was found between exposure time and axillary dose, DAP and axillary dose with and without shielding and also between DAP and BMI. No significant association was observed among PTCA and CA procedures between BMI and axillary dose with or without shielding. Shielding of the axillary area will reduce the radiation dose significantly to the first operator and furthermore the DAP, exposure time and patient's BMI are the main factors that contribute to the radiation dose to the axillary region.

Keywords: Axillary Dose, Interventional Radiology, Lead Aprons

EVALUATION OF AVERAGE GLANDULAR DOSE IN RELATION TO BODY MASS INDEX AND MENOPAUSAL STATUS IN DIGITAL BREAST TOMOSYNTHESIS

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Mammographic quality control involves estimation of average dose to the glandular tissues of the breast. Present study was conducted at the Nawaloka Hospital, Colombo, Sri Lanka with the 109 women who attended mammographic screening. Main objective was to investigate the relationship between AGD (Average Glandular Dose) and Body Mass Index (BMI) in Digital Breast Tomosynthesis (DBT). Data on participants were collected by incorporating a structured questionnaire. Height (cm) and weight (kg) of each participant was used to estimate the BMI. Average dose to the glandular tissues (mGy) of the breasts was recorded from the DBT computer system. Majority of participants belonged to overweight and obese BMI categories while none belonged to lean category. Premenopausal women allotted to normal, overweight and obese BMI categories had their mean BMI of $21.27 \text{ kg}/\text{m}^2$, $25.63 \text{ kg}/\text{m}^2$ and $30.84 \text{ kg}/\text{m}^2$ respectively. The counterpart postmenopausal women had mean BMI of $21.85 \text{ kg}/\text{m}^2$, $25.17 \text{kg}/\text{m}^2$ and $31.12 \text{kg}/\text{m}^2$ respectively. Relationship between AGD and BMI during MLO (Mediolateral oblique) views in both the pre and post-menopausal categories was significant (r=0.64, 0.53, 0.40, 0.30 and P=0.00 to 0.03). The study did not reveal a significant correlation of BMI to AGD at right craniocaudal views (RCC) in both categories (P=0.19 and 0.45). However, the correlation was significant during left craniocaudalview (LCC) in premenopausal women (r=0.33 and P=0.01). In contrast, relationship could not be established during LCC view in post-menopausal category (P=0.15). It is concluded that relationship of AGD and BMI holds a significant and positive relationship (r=0.64 to 0.30 and P=0.00 to 0.03) during MLO views in both the pre and post-menopausal women categories and LCC view in pre-menopausal category. But this matter has to be verified with higher population.

Keywords: Breast Cancer, Digital Breast Tomosynthesis, BMI, Menopausal State

ESTABLISHMENT OF DIAGNOSTIC REFERENCE LEVEL (DRL) FOR COMPUTED TOMOGRAPHY (CT) EXAMINATIONS FROM SELECTED HOSPITALS IN SRI LANKA

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Computed Tomography (CT) examinations deliver higher patient dose in comparison with other conventional x-ray examinations. The aim of this study was to establish local diagnostic reference levels (DRLs) for selected CT examinations. This was a cross-sectional study investigating local DRL in selected hospitals from 16 and 640 slice CT scanners in Sri Lanka. Three hundred and fifty adult patients who underwent CT scans of non-contrast and contrast brain, contrast enhanced chest, HRCT chest, KUB, contrast enhanced abdomen and chest-abdomen examinations were included. Patients' parameters (height, weight, age and sex) and CT scan parameters (kVp, effective mAs, total scan time, slice thickness, $CTDI_{(vol)}$ and DLP) were collected. The mean age of the patients was 53.25($\pm$16) years and the age range was 19 - 89 years. Local DRLs were proposed to establish as the 75th percentile of $CTDI_{(vol)}$ and the DLP values of NC- brain, CE-brain, KUB, CE-chest, HRCT, CE-abdomen and Chest-abdomen obtained from the 16 slice CT machine. LDRLs for adult examinations determined for NC- brain, CE-brain, KUB, CE-chest, HRCT, CE-abdomen and Chest-abdomen in terms of $CTDI_{(vol)}$ were 70.90 mGy, 141.8 mGy, 11.80 mGy, 17.70 mGy, 12.80 mGy, 45.27 mGy and 27.02 mGy respectively. Effective doses for the examinations NC-brain, CE-chest and CE-abdomen were 2.60 mSv, 7.65 mSv and 20.7 mSv respectively and they were higher than the AAPM reference levels. The study's DRLs values were generally higher than the ICRP 2007 recommended values. Moreover according to the research, DRLs values of the commonest CT examinations were generally higher than the DRLs values of some other countries, requiring further optimization process for these determined DRLs.

Keywords: Computed Tomography (CT), Volumetric Computed Tomography Dose Index ($CTDI_{(vol)}$), Dose Length Product (DLP), Diagnostic Reference Level (DRL)

ESTIMATION OF RADIONUCLIDE ACTIVITY OF BLADDER FOR PATIENTS UNDERGOING BONE SCAN

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Among variety of medical imaging modalities, nuclear imaging method is a safe, has less side effects and is a painless technique to image the body and diagnose diseases. The objective of this study was to determine the amount of radionuclide activity in bladder during bone scan and to estimate the percentage of radionuclide activity in the bladder compared to injected dose. Results of the study were used to find out the correlation between Body Mass Index (BMI) and amount of activity in bladder and the correlation between gender and radionuclide activity in bladder in the bone scan. A cross-sectional study was conducted among patients referred to Tc99m Methylene Di-Phosphanate (MDP) whole-body bone scans to estimate the radionuclide activity in bladder by using dual head Single Positron Emission Computed Tomography (SPECT) machine. One hundred (100) patients were selected for study. After two hours of injection of Tc99mMDP, scan was performed. The total counts were taken by drawing region of interest (ROI) around the bladder in each image. Conjugate view method was used to convert count into activity. The mean value of bladder activity fraction was 0.075% (ranged from 0.39% to 0.012%) with Standard Deviation (SD) of 0.076. According to the Kruskal Wallis test, there was no correlation between BMI and bladder activity with $P = 0.923$ ($P > 0.05$) and according to the Mann-Whitney test, there was a correlation between gender and bladder activity with $P = 0.002$ ($P < 0.05$). Bladder receives very less amount than 0.5% of activity as a non-imaging organ during bone scan and the estimation of bladder activity is worth because the patients can be encouraged to be well-hydrated after injection to eliminate radiopharmaceuticals from body.

Keywords: Body Mass Index, Single Positron Emission Computed Tomography, Methylene Di-Phosphanate

ASSESSMENT OF STUDENT'S PERCEPTIONS OF THE BSc. RADIOGRAPHY DEGREE PROGRAMME AT FACULTY OF ALLIED HEALTH SCIENCES, UNIVERSITY OF PERADENIYA, SRI LANKA

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Radiography education in Sri Lanka has expanded up to the degree level during the past decade. University of Peradeniya is the only state university offering free education for the radiography profession in Sri Lanka. Objectives of this study were to assess the factors influencing students to choose undergraduate radiography programme and carrier aspirations related to the degree. Total of 109 students following the radiography undergraduate program in Department of Radiography/ Radiotherapy, Faculty of Allied Health Sciences, University of Peradeniya were taken as the study sample for this questionnaire-based study. The sample consisted of first year (38), second year (22), third year (29) and fourth year (20) students. The questionnaire was divided into two parts: Part A contained the demographic data while part B involved information related to student's perception on radiography degree and their employment plans. Results demonstrated that majority of students (59.6%) have chosen to follow the radiography degree depending on the Z-score obtained at G.C.E Advanced Level examination. Only 78.9% of students were aware about the risk of radiation associated with the radiography field before enrolling in degree. Most students (45.9%) expected to work as radiographers in the government sector after the graduation. The study concluded that students have selected the radiography field mainly depending on their Z-scores rather than on their interest in the subject or health sector. Therefore, it is recommended to provide proper information regarding the degree programme and associated radiation risk to potential candidates prior to the selection of the degree programme.

Keywords: Career Aspiration, Radiography Degree, Undergraduates

METALLOTHINEIN RESPONSES IN RELATION TO DISEASE PROGRESSION IN CKD AFFECTED PEOPLE OF PADAVIYA, SRI LANKA

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Metallothioneins (MT) are metal detoxifying proteins that sequester metals. MT expression is induced by metals such as As, Cd, and Zn. In a cross sectional study, metallothionein expression was followed in chronic kidney disease (CKD) affected people in Padaviya area to investigate whether the disease is etiologically linked to metal exposure. Male subjects between 35-75 years of age volunteered for the study (n=202) at CKD clinic, Base Hospital, Padaviya. Samples were collected similarly at Padalangala for a non-endemic control. Questionnaire based information, whole blood and spot urine samples were collected from each subject serum Creatinine and Cystatin C and urine Albumin to Creatinine ratio (UACR mg/g) were determined by standard analytical procedures. eGFR (ml/min-1.722m2) was calculated using MDRD and EPI equations. Protein expression levels of MT-1A and MT-2A genes were measured by enzyme linked immunosorbent assay using polyclonal mouse anti-human MT1A and monoclonal mouse anti-human MT2A antibodies respectively.

Results showed that MT1A protein level of CKD stage II was statistically different ($p<0.05$, one way ANOVA followed by Tukey HSD) from both stages III ($p<0.002$) and IV ($p<0.004$) whereas MT2A protein levels were similar ($p>0.05$) among all stages and control. Simple linear correlation (Pearson's) analyses reveled that MT1A protein levels positively associated ($p<0.05$) with disease progression in terms of serum Cystatin C based (EPI) eGFR (r, 0.163) and serum Creatinine and Cystatin C combined equation based (EPI) eGFR (r, 0.171). Intra-stage analyses showed that MT1A protein level was positively correlated ($p<0.05$) to MDRD eGFR in stage II (r, 0.391), Cystatin C based EPI eGFR in stage III (r, 0.381) and UACR of 0-30 mg/g group (r, 0.284). In conclusion, MT-1A expression appears to be modulated with the disease progression in CKD patients in Padaviya area. The study continues.

Keywords: Metallothionein, Chronic Kidney Disease, Padaviya

ANTI-BACTERIAL ACTIVITY OF AQUEOUS AND METHANALIC ROOT EXTRACTS OF MEDICINAL PLANT HETEROPOGON CONTORTUS

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Synthetic drugs available for the treatment of chronic and infectious diseases are very expensive and some of them have become less effective due to the emergence of antibiotic resistance. As such, research is now focused on natural sources, including plants and plant parts for the development of novel therapeutic agents. This study evaluated the *in vitro* anti-bacterial activity of aqueous and methanolic root extracts of Sri Lankan medicinal plant *Heteropogon contortus* against two clinically significant pathogenic strains, *Escherichia coli* (ATCC 25922) and *Staphylococcus aureus* (ATCC 25923). Agar well diffusion method was performed separately in triplicates (N=3) for both microbial suspensions to evaluate the anti-bacterial effect. Additionally, phytochemical compositions of aqueous and methanolic root extracts were also examined by performing standard chemical tests. Results revealed that each crude root extract exhibited anti-bacterial activity against both *E. coli* and *S. aureus*. The largest zones of inhibition against both *E. coli* and *S. aureus* were detected from the methanolic root extract at a concentration of 200 mg/ml and this is a novel finding. Phytochemical analysis of roots revealed the presence of bioactive constituents such as alkaloids, phenols and flavonoids that account for the anti-bacterial potential. Therefore, root of *H. contortus* is a reliable source to develop potent, cheap and natural anti-bacterial agents. Future research focusing on high concentrations of different root extracts is recommended to further understand the anti-bacterial capability of *H. contortus.*

Keywords: *Heteropogon Contortus,* Medicinal Plant, Root, Anti-Bacterial Activity

DEVELOPMENT OF METFORMIN HYDROCHLORIDE SUSTAINED RELEASE TABLET

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Metformin hydrochloride (MH) is a binguanide, used to treat type 2 diabetes by oral administration as first line drug choice. MH is a hydrophilic drug, which facilitates glucose utilization by peripheral tissue and reduces glucose production in the liver. Objective of the study was to develop the formulation of MH sustained released tablet locally. Eight different formulations of MH sustained release tablet were developed one by one, according to the drug releasing property of previous formulation with MH, hydrophilic drug releasing polymers, maize starch and magnesium stearate through wet granulation method. Twenty tablets from each formulation were tested for uniformity of weight, friability, hardness, thickness and diameter according to British Pharmacopeia (BP) standard. *In-vitro* drug release studies were carried out according to United State Pharmacopeia (USP) standard. The sample was withdrawn at end of 1st, 2nd, 4th, 6th, 8th and 10th hours from medium of phosphate buffer (pH 6.8) in vessel of dissolution tester and released amount of drug measured through UV-visible spectrophotometer. Tablet assay was done through High Performance Liquid Chromatography (HPLC) according USP standard. The physical testing and tablet assay of all developed formulations complied with BP and USP standard. Drug releasing profile of four formulations out of eight complied USP standard limits. One formulation was the best formulation out of eight. All formulations had same amount of MH and they were manufactured according to the same procedure. However, drug releasing profile defers in each formulation due to combination and ratio of hydrophilic polymers. Finally, MH sustained release tablet was developed successfully through a series of trials. The combination and ratio of drug releasing polymers in formulation affect the drug releasing property of the tablet.

Keywords: Metformin Hydrochloride Sustained Release Tablet, United State Pharmacopeia, British Pharmacopeia

IN-VITRO ASSESSMENT OF PHYLLANTHUS DEBILIS FOR HEPATOPROTECTIVE ACTIVITY AGAINST DAMAGE INDUCED BY PARACETAMOL ON HEPG2 CELLS

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Paracetamol (acetaminophen) is used as an analgesic and antipyretic drug globally and is considered an intentional self-poisoning drug. Paracetamol (PCM) overdose causes deaths and liver failure. *P.debilis* is an herbal plant to treat liver diseases. Porridge of the *P.debilis* plant is used in traditional medicine to treat liver diseases. The present investigation was focused on the hepatoprotective effect of aerial and root parts of *P.debilis* plant in paracetamol induced toxicity. Aerial (PAP) and root (PRP) parts of *P.debilis* plants were refluxed (50g) separately for 3hrs with deionized water. Pre evaluated non-toxic concentrations of plant extracts (<100 μg/ml) were co-treated with a lethal dose of PCM (30mM) on HepG2 cells for 24 hours. Cell viability was determined using total protein contentin the cell lysate after 24 hour incubation time. Percentage leakage of lactate dehydrogenase (LDH) and alanine aminotransferase (ALT) activity in the spent medium was also evaluated after 24 hour co-exposure of plant extracts with PCM (30mM). Ethidium bromide and acridine orange staining were carried out to determine the mode of cell death and examined under the fluorescent microscope. Cell viability was increased with the co-treatment of PRP and PAP with PCM (30mM) in concentration dependent manner which initially declined with the treatment of PCM (30mM). LDH is a cytoplasmic enzyme present in almost all eukaryotic cells which is a sensitive assay for the evaluation of cytotoxicity. Percentage LDH leakage to the medium was reduced with the treatment of PRP and PAP which was initially induced by PCM (30mM). Cell damage associated with PCM was assayed by the measurement of ALT levels in the medium. Significant dose dependent reduction of cytotoxicity was observed with the treatment of PRP and PAP (p<0.05). Ethidium bromide and acridine orange dual stain results demonstrated that red to orange colour dead cells with PCM treatment was reduced and turned to green colour live cells with the co-treatment of PRP and PAP (84 μg/ml). PCM induced hepatotoxicity is reduced with the co-treatment of PRP and PAP in a concentration dependent manner.

Keywords: Hepato protective, HepG2, *P.debilis*.

FORMULATION AND STABILITY EVALUATION OF TWEEN 20® CONSISTING NEEM OIL BASED EMULSION

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Process parameters and stability evaluation are important to develop a new formulation. Since Neem oil and Tween 20® are cheap, less toxic, highly available and affordable, these were chosen to formulate the emulsion. Objectives of the study were to formulate a stable emulsion consisting of Neem oil and Tween 20® and to evaluate the stability of the optimized formulations. Primary emulsions were formulated in different ratios of oil, water and surfactant by using the magnetic stirrer (300 rpm). Respective secondary emulsions were obtained by high shear homogenization (10,000 rpm) of optimized formulations of primary emulsions. Samples were subjected to centrifugation (1200 rpm) to determine the accelerated stability. All the optimized formulations of primary and secondary emulsions were subjected to observe short-term stability, accelerated stability for 14 days and long-term stability for 90 days. Most of the samples of primary and secondary emulsions were stable throughout the short-term stability evaluation period except one primary and two secondary emulsions. Most of the secondary emulsions showed greater stability period than that of respective primary emulsions. Creaming and phase separation were the main unstable conditions that occurred during the long-term stability evaluation period. Two primary emulsions and one secondary emulsion showed instability during the accelerated stability evaluation period. The best formula consisted of 45% Neem oil, 35% water and 20% Tween 20®. Secondary homogenization led to enhance the stability of the formulations..

Keywords: High Shear Homogenization, Creaming, Phase Separation

COMPARISION OF HIP RANGE OF MOTION (ROM) IN INDIVIDUALS WITH AND WITHOUT LOW BACK PAIN (LBP) IN NATIONAL HOSPITAL OF SRI LANKA (NHSL)

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LBP is a leading cause of disability among people worldwide. Due to the close anatomical proximity of the hip joint with the lumbopelvic region, it is believed that the hip joint function is related to low back pain. Comparing hip ROM in individuals with and without LBP, with gender and age in Non-LBP individuals were study objectives. Observational case control study was carried out between two groups of 50 LBP and 50 Non-LBP individuals in NHSL. Socio-demographic characteristics were gathered using an interviewer-administered questionnaire and hip active ROM in all 3 anatomical planes was measured by the universal goniometer in both groups. BMI was taken by measuring Height and Weight. A significant difference was found between the two groups in all hip ROM (p=0.000). Mean hip ROM in each plane was higher in non-LBP individuals. Means of hip ROM values were higher in the group aged between 25-32 years than the 32-60 years aged group. There was a significant association and correlation between hip flexion, extension, abduction and adduction with age (P value < 0.05). Mean of hip ROM in females are higher than males except in hip abduction and extension. There was a significant difference between means of hip flexion, hip abduction, hip internal rotation and external rotation with gender (p<0.05). In LBP group, every hip ROM value was decreased. Age and gender had an association with the hip ROM in Non-LBP individuals. Further studies should be carried out to see the relevance of this study to whole Sri Lankan population.

Keywords: Low Back Pain, Hip Range of Motion, Age, Gender

POSTURAL CONTROL AND SENSORIMOTOR FUNCTIONS IN OLDER ADULTS WITH DIABETIC PERIPHERAL NEUROPATHY

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Older adults with diabetic peripheral neuropathy (DPN) have a higher incidence of falls compared to type 2 diabetes mellitus (DM) patients without DPN(NDPN). The study aim was to compare postural control and sensorimotor functions of DPN patients with NDPN and healthy DM patients were recruited from diabetic clinics via purposive sampling. DPN was assessed by validated symptom and examination score and vibration perception thresholds (Biothesiometer;VPT). Proprioception was measured by a lower-limb matching task used in Physiological Profile Assessment (PPA). Tactile sensitivity was assessed by Semmes-Weinstein pressure aesthesiometer. Knee extension strength was measured isometrically by a tool in PPA and five-time sit to stand test. Balance abilities were measured by sway measures. The sample comprised 65 participants-(42.4% males and 57.6% females); DPN-(n=29; age=61.3±5. 4 years; DM duration=17.5±6.2 years) and NDPN-(n=25; age=60.7±6.2 years; DM duration=13.4±6. 9 years) and healthy-(n=11; age=55.0±3. 4 years). There was a significant difference between groups for proprioception-(F(2,63)=4.52,p=0.015) and tactile sensitivity-(F(2,61)=14.83, p=0.000). Significantly lower proprioception in DPN-(2.9±1.6, p=0.02) compared to healthy(0.6±1.02) was detected. Significantly lower tactile sensitivity in DPN-(4.6±1.1) compared to healthy-(3.1± 0.5, p=0.000) and NDPN-(3.7±0.5, p=0.001) were detected. The DPN showed, compared to healthy controls, an increased five-time sit to stand time (p=0.009), reduced knee extension strength (p=0.001) and increased antero-posterior sway (p=0.03) on foam with eyes opened condition. The DPN showed, compared to the NDPN, reduced knee extension strength(p=0.006), increased medio-lateral sway (p=0.03) on foam with eyes opened condition. DPN patients have significantly impaired balance, LL proprioception and tactile sensitivity which causes postural imbalances leading to increased risk of falling. Fall risk screening should be performed in DPN using a tool including postural and sensorimotor functions.

Keywords: Postural Control, Sensorimotor Functions, Diabetic Neuropathy

A STUDY ON THE RELATIONSHIP BETWEEN COLLECTIVE EFFICACY AND COACHING BEHAVIOUR OF ELITE FEMALE VOLLEYBALL PLAYERS IN SRI LANKA

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Collective efficacy plays an important role in the successful performance of team sports. The main objective of this survey study was to investigate the relationship between collective efficacy and coaching behavior of elite club level female volleyball players in Sri Lanka. Further, the effect of coaching behavior on performance, collective efficacy level of the teams according to their level of success and differences among the subscales of the collective efficacy were also identified. The Collective Efficacy Questionnaire (CEQ) and Leadership Scale for Sports (LSS) were used as instruments for data gathering. A sample of 144 players from 12 volleyball teams completed the CEQ and LSS at the end of the competition season (November 2017). Results revealed that coaching behaviors such as democratic leadership, positive feedback, social support, and training and instruction had a positive correlation with collective efficacy. With respect to coaching behavior, coaches show higher training and instruction and lower autocratic behavior. The scores for training and instruction, social support, autocratic and democratic leadership were higher ($P<0.05$) in coaches of successful teams compared to those of coaches in less successful and unsuccessful teams. The highest ($P<0.05$) collective efficacy scores were recorded in successful teams followed by less successful and unsuccessful teams. There were significant differences among the subscales of collective efficacy. The major contributing factors for collective efficacy were the preparation and the unity of players. Overall, the findings suggest that coaching behavior and collective efficacy contribute to the success of a team's performance. Further, players' mental and physical preparation and the team unity play a vital role in team efficacy.

Keywords: Collective Efficacy, Coaching Behavior, Volleyball

CURRENT RESPIRATORY PHYSIOTHERAPY PRACTICES AMONG PHYSIOTHERAPISTS FOR PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING (CABG) IN SRI LANKA

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Several respiratory physiotherapy techniques such as deep breathing exercises, positive expiratory pressure (PEP) exercises and incentive spirometry are practiced worldwide by patients undergoing coronary artery bypass grafting (CABG). This study aimed to determine the current practice of respiratory physiotherapy among physiotherapists for patients undergoing CABG in Sri Lanka. It was conducted among physiotherapists participating in CABG management in cardiothoracic units in all government and private hospitals in Sri Lanka. Ethics clearance was obtained from Ethics Review Committee, Faculty of Medicine, University of Colombo. Data was collected using an expert-validated, pretested self-administered questionnaire and analyzed using SPSS version 21. Twenty nine physiotherapists participated (response rate-50.87%). Majority (51.7%) were males. Mean (+/-SD) age was 39.17+/-11.6 years. Mean (+/-SD) work experience and duration of practice as a physiotherapist in cardiothoracic unitswere 13.88+/-11.22 and 5.48+/-5.4 years respectively. All physiotherapists practiced the following on all patients: commenced physiotherapy pre-operatively, commenced physiotherapy post-operatively on 1st post-operative day, treated patients in intensive care units (ICUs) and wards daily, practiced deep breathing exercises and incentive spirometrypre-operatively until discharged, prescribed home exercises for at least 3 weeks and provided incentive spirometer for home use. Majority (65.5%) advised patients to practice incentive spirometry for one month after CABG. However, no physiotherapist practiced PEP techniques. The study concludes that for patients undergoing CABG in Sri Lanka, despite lack of a uniform protocol and variations in frequency and duration, all physiotherapists commence respiratory physiotherapy preoperatively, treat patients in ICU and wards regularly, and arrange home physiotherapy, using incentive spirometry as the first choice.

Keywords: Coronary Artery Bypass Grafting (CABG), Respiratory Physiotherapy Techniques, Sri Lanka

PREVALENCE OF FLATFOOT AND ITS CORRELATION WITH AGE, GENDER AND BMI AMONG UNDERGRADUATES AT THE FACULTY OF ALLIED HEALTH SCIENCES, GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY, SRI LANKA

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Flatfoot, also known as pes planus is a postural deformity, congenital or pathological due to collapse of foot arches. It leads to entire sole of foot to contact ground completely or near-completely. The objectives of this study were to determine the prevalence of flat foot among Allied Health undergraduates and its correlation with age, gender and BMI (Body Mass Index). A cross-sectional study was conducted among 533 male (n=131) and female (n=402) participants (mean age 23.009) enrolled through convenient sampling. Interviewer-administered questionnaire was used to collect demographic data. Height and weight measurements were obtained to calculate BMI. Footprints were obtained using Modified Harris Mat. Arch index ratio was used to determine the foot type. The data were analyzed using SPSS version 23. $P<0.05$ was considered statistically significant. The overall prevalence of flat foot in the age group studied (19-26 years) was 34.7% (n=185), the majority (73.5%) with bilateral flat foot. Though a notably higher percent of females (74.1%; n=137) compared to males (25.9%; n=48) had flat foot, the study failed to find a statistically proven correlation with gender (p=0.069) and with age (p=0.540). However, flatfoot showed a statistically significant association with BMI (p=0.000) with relatively higher prevalence (n=164, 52.4%) among overweight and obese categories of BMI (23–24.9). The prevalence of flatfoot among Allied Health undergraduates was notably high requiring screening for early detection and appropriate referral for corrective measures.

Keywords: Flatfoot, Gender, Body Mass Index

THE IMPACT OF PHYSICAL, LIFESTYLE AND OCCUPATIONAL FACTORS FOR THE GENERATION OF POOR SEMEN PARAMETERS OF MALES ATTENDING INFERTILITY CLINIC, CASTLE STREET HOSPITAL, COLOMBO

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Infertility is a major health problem around the world. Male infertility contributes generally 50% to this matter and it is also a major reproductive health related issue related to the Sri Lankan population as well. Lifestyle habits, environmental and occupational hazards, physical status of individuals can be recognized as major risk factors which may affect male infertility. A cross sectional study was conducted on 299 individuals at Castle Street Hospital infertility clinic from 13th July 2017 to 30th September 2017. Socio-demographic, lifestyle and occupational risk factors of each individual were collected using interviewer administered questionnaire and BMI (Body Mass Index) was measured as a physical parameter. After 2-5 days of abstinence, samples were collected for laboratory investigations. Sperm concentration, motility, morphology and semen volume were measured. Data analysis was performed by using SPSS and SAS. Significant associations were found for abnormal sperm concentration ($\leq 15 \times 10^6$) with smokers and tight underwear users ($p < 0.05$) and abnormal sperm motility ($\leq 32\%$) with tight underwear users ($p < 0.05$). Tight underwear users and smokers have shown significant relationships with semen parameters whilst age, a socio-demographic factor also has shown a significant relationship with few of the semen parameters. Age, smoking and wearing tight underwear has shown a great risk for the generation of poor semen parameters, which can lead to male infertility. However, BMI did not express a significant relationship with any of the semen parameters ($p > 0.05$). Furthermore, it is very important to carry out large scale studies regarding this problem to establish the effect of above mentioned factors.

Keywords : Male Infertility, Semen Parameters, Risk Factors

STUDY OF INITIAL LYSIS TO INVESTIGATE OSMOTIC FRAGILITY IN ERYTHROCYTES OF CHRONIC MYELOID LEUKEMIA PATIENTS ASSOCIATED WITH ANEMIA

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Chronic Myeloid Leukemia (CML) is a hematological malignancy. Some studies have reported structural abnormalities in the erythrocyte membrane in CML which may contribute to its anemia. This study was performed to determine the erythrocyte membrane fragility of CML patients associated with anemia using Osmotic Fragility (OF) test. An experimental study was carried out between 20 voluntary Philadelphia chromosome positive anemic CML patients and 25 voluntary healthy controls. OF test was performed; median corpuscular fragility (MCF) and initial lysis were obtained. The data were analyzed by SPSS software version 20.0. The MCF of controls were within the reference range (Mean 4.23, SD 0.11) and for the patient group, the MCF values were ranged in 3.67-4.60 g/l (Mean 4.22, SD 0.38). The initial lysis values of the control group were within the range of 5.0-6.0 g/l with mean value of 5.36 g/l (SD 0.42) and the patients' initial lysis values were within 6.00-8.00 g/l with mean value of 7.07 g/l (SD0.69), representing a significant difference between the control and the patient group (Non parametric test; P=0.000< 0.05). However, the MCF of the control and the patient group did not provide a significant difference. Initial lysis plays an important role in the OF test as it could detect hemolysis in advance. The significant increase in initial lysis values in the patients group compared to controls may have been resulted from a sub population of erythrocytes with defected membranes.

Keywords: Chronic Myeloid Leukemia, Erythrocyte Membrane Fragility, Initial Lysis

CORRELATES OF HEAT STRESS IN CKD-AFFECTED REGIONS OF SRI LANKA

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'The potential associations between kidney function parameters derived from urinalysis and symptoms of heat stress among Sri Lanka agricultural workers were examined. Participants in four villages (n=261) covering high- and low-prevalence chronic kidney disease (CKD) areas completed a questionnaire to elicit symptoms of heat stress and also provided urine samples. Among 216 agricultural workers without diabetes or kidney disease, the mean age of the sample was 46.6 and 37% were males. Among the heat stress and dehydration symptoms, headache and dry mouth were reported 3+ days/week by over 30% of the population, and exhaustion, dizziness and heart racing by over 20%. Participants in the three villages from the high-prevalence CKD area were more likely to show evidence of kidney damage (ACR > 30, 72.2% vs. 55.6%, $p < .05$) and greater heat stress-dehydration symptoms (8.4 vs. 6.1, $p < .001$). In a circumscribed region of Sri Lanka, villagers experiencing higher temperatures and higher prevalence of CKDu overall had greater evidence of kidney damage by standard urine parameters, such as ACR, even after exclusion of people with diabetes or CKD. Since the entire sample consisted of agricultural workers using similar farming practices, higher temperatures may be a factor in the increased incidence of kidney disease. Participants in the higher temperature villages reported more symptoms of dehydration and heat stress, consistent with exposure to this environmental stress.

Keywords: Chronic Kidney Disease, Heat Stress, Agricultural Workers

HEMATOLOGICAL VARIATIONS ALONG DISEASE PROGRESSION IN CKD AFFECTED PEOPLE OF GIRANDURUKOTTE AND MAHIYANGANAYA, SRI LANKA

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Hematological parameters of patients with chronic kidney disease (CKD) in Girandurukotte and Mahiyanganaya areas were followed in a cross-sectional study that comprised 175 volunteer subjects. Whole blood, urine and background information were collected from each under informed consent. The study spanned all five stages of CKD progression and a control (estimated glomerular filtration rate, eGFR>120 ml/min/1.73m^2). Erythrocyte, leukocyte (total and differential) and platelet counts, hemoglobin and hematocrit levels were obtained from an automated hematology analyzer. In addition, total and differential leukocyte counts were made from Giemsa stained blood smears. Disease progression was followed in terms of kidney dysfunction markers; serum creatinine based eGFR (MDRD equation) and urine albumin to creatinine ratio (UACR, mg/g). Results showed inter stage differences in hemoglobin levels, erythrocyte, lymphocyte, monocyte and basophil numbers of automated counts, and in lymphocytes and monocytes in blood smears (p>0.001, one-way ANOVA with Tukey HSD). Pearson's linear correlation of hematology parameters with disease progression revealed significant associations (p<0.001) of eGFR with the automated counts of erythrocytes (r<0.001), hemoglobin (r<0.001), hematocrit (r=0.001), total leukocytes (r=0.002), lymphocytes (r<0.001), monocytes (r<0.001), and basophils (r=-0.012). Platelets showed a positive correlation (r=0.015, p<0.05). UACR significantly (p<0.001) associated with erythrocytes (r=-0.006), hemoglobin (r=-0.005), hematocrit (r=-0.009), lymphocytes (r<0.001), monocytes (r=-0.004) and basophils (r=0.008). Counts from blood smears showed correlation (p<0.001) of eGFR to total leukocytes (r=0.005), lymphocytes (r<0.001) and monocytes (r<0.001) while UACR associated with lymphocytes (r<-0.001) and monocytes (r=-0.001). Results collectively revealed that the blood cell counts change with CKD disease progression.

Keywords: Hematology, Chronic Kidney Disease, Sri Lanka

INTERFERENCE OF BILIRUBIN IN SERUM CREATININE ESTIMATION BY JAFFE REACTION AND CREATINASE METHOD

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Serum creatinine determination is crucialin assessing renal functions. Jaffe reaction is used world-wide in serum creatinine estimation. It has been reported that bilirubin affects Jaffe reaction causing underestimation. However, Creatinase method has little interference but is comparatively more expensive. The objective of this study was to compare the creatinine concentrations of serum with different bilirubin levels using Jaffe reaction and Creatinase method. Three serum pools were placed in an infant phototherapy incubator for 18 hours to photolysis the bilirubin. Serum creatinine concentration of each pool was measured by Creatinase method and the values were 0.51, 2.41 and 7.33mg/dL. Each serum pool was then spiked with eleven different bilirubin concentrations.The bilirubin concentrations of the spiked serum were 0, 3, 6, 9, 12, 15, 18, 21, 24, 27 and 30mg/dL. The total bilirubin, creatinine by Jaffe reaction and Creatinase method were measured by Indiko ™ clinical and specialty chemistry system. Results were analyzed by linear regression analysis. According to the Creatinase method, there was no significant underestimation in serum with 0.51mg/dL of creatinine but Jaffe reaction showed a significant underestimationfrom bilirubin concentration of 7.18mg/dL. In serum with 2.41mg/dL of creatinine, Creatinase method and Jaffe reaction were given significant underestimations by bilirubin concentrations of 9.05 and 5.64mg/dL, respectively. In serum of 7.33mg/dL creatinine, significant underestimations were given from bilirubin levels of 3.6 and 8.18mg/dL by Creatinase method and Jaffe reaction, respectively. According to the present study, Creatinase method is reliable in estimation of serum creatinine of ≤0.51mg/dL.

Keywords: Jaffe Reaction, Creatinase Method, Serum Bilirubin

EFFECT OF THERMODURIC BACTERIA ON SHELF-LIFE OF MILK AND IMPROVEMENT OF PASTEURIZATION PROCESS

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Pasteurization is a means of increasing the shelf-life of milk. This study focused on identifying thermoduric bacteria that decrease the shelf-life of pasteurized milk and finding a solution to minimize their presence in pasteurized milk. The study was carried on site of MILCO dairy factory in Sri Lanka. Aseptically collected milk samples were used for the determination of total colony count of bacteria in silo, balance tank where milk was sampled just before pasteurization and just after passing pasteurization unit at different times of the day to check the possibility of process line contaminations between silo tanks and pasteurization unit and the effect on the efficiency of pasteurization. *Staphylococcus aureus, Staphylococcus epidermidis* and *Bacillus cereus* were identified as resistant bacteria to pasteurization. Since bacteria under stress are more tolerant to harsh environmental conditions, it was assumed that providing bacteria with more favourable conditions would make them more vulnerable to pasteurization. Based on this assumption, a new pasteurization process is proposed where milk is held at 30^0 C for 17-20 min prior to pasteurization. The shelf-life of milk, pasteurized by simulating these conditions in the laboratory, was increased up to eight days in comparison to five days with regular process. This process is yet to be tested for its practicability, by setting a plate system for heating the raw milk up to 30^0 C after the silo and store milk at 30^0 C in the balance tank for the desired time.

Keywords: Pre-Heat-Treatment, *Staphylococcus*, *Bacillus Cereus*

Poster
Sessions

EVALUATION OF IN-VITRO ANTIBACTERIAL EFFECT OF LAWSONIAINERMIS L. PLANT AGAINST ACINETOBACTER BAUMANNII AND PSEUDOMONAS AERUGINOSA

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Globally there is a massive increase in the prevalence of Multi Drug Resistant (MDR) strains of *Acinetobacter baumannii* and *Pseudomonas aeruginosa*. Hence it is considered one of the biggest threats in the health care sector in the 21st century. Nosocomial infections known as hospital acquired infections (HAI) are associated with a great deal of morbidity, mortality and increased financial burden. The misappropriations of antimicrobial agents create the emergence of prominent MDR strains. This study has been evaluated to fulfill the gaps by the antimicrobial effects against *Acinetobacter baumannii* (ATCC® 19606 ™) and *Pseudomonas aeruginosa* (ATCC® 27853 ™) using the aqueous extracts of flowers, seeds, leaves, bark and root of *Lawsoniainermis* L. plant. The antibacterial activity of the extracts was evaluated using the cylinder plate method, and Gentamycin was used as the positive control while distilled water used as negative control. A series of concentrations was made with all six plant parts (flowers, seeds, leaves, bark, rootand combination). The concentrations used were 250 $\mu g/ml$, 500 $\mu g/ml$, 750 $\mu g/ml$ and 1000 $\mu g/ml$. Results revealed that all aqueous extractions exhibit marked antibacterial activity zones of inhibition values ranging between 12.94 mm to 19.72 mm and 12.87 mm to 19.66 mm against *A.baumannii* and *P.aeruginosa* respectively. The result is statistically significant ($p< 0.05$). It is concluded that Aqueous extraction of the flower of *Lawsoniainermis* L. plant showed the highest antibacterial activity while aqueous extraction of combination showed the second highest antibacterial activity against both *Acinetobacter baumannii* (ATCC 19606) and *Pseudomonas aeruginosa* (ATCC 27853) respectively. This is a discovery of novel antibiotic for nosocomial infections in future.

Keywords: *Lawsoniainermis* L., Multi Drug Resistance, Antibacterial Activity

EFFECTIVENESS OF USHNODHAKADHĀRĀ IN THE MANAGEMENT OF PSYCHOLOGICAL STRESS

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According to Ayurveda, *Pragnāparādha* (intellectual error), *Parināma* (time factor), *Asātmēndriyārtasamyōga* (unwholesome contact of senses with its objects) cause all physical and mental diseases. At the chronic decline of *Satvaguna* in the *manas* leads to the mind becoming stressed. Imbalances in, *Rajas* and *Thamas Guna* also leads to psychological stress. *Dhārā karma* at the *Agnyā Chakra* is known as effective in mental disturbances. The current research has been designed to study the efficacy of *Ushnodhakadhārā* against psychological stress with reference to Ayurveda *Manōbhāva* concepts. Ninety individuals with psychological stress were randomly selected and grouped in to 2. The study was conducted for 21 consecutive days with 45 minutes of *Dhārā Karma* and 30 minutes of supportive psychotherapy (SPT). Follow up period was 60 days. Study group (SG) were subjected to *Ushnodhakadhārā* and SPT. The control group was subjected only to SPT. The assessment was carried out before and at the end of treatment which was based on the relief of clinical signs and symptoms of psychological stress and *manōbhāva* according to a grading system. Data were statistically analyzed. SG was found highly significant in each *manōbhāva*, $p < 0.001$. *Ushnodhakadhārā* elaborated better results in *Manobhāva*. Pacification of provoked *Dōsha* using *Ushnodhakadhārā* promoted the *Mēdhya, Sthairya Mana, Harsha, Shraddhā* and *Smruti*.

Keywords: *Manōbhāva, Ushnodhakadhārā,* Stress, *Dhārā*

KNOWLEDGE AND PRACTICES REGARDING SELF-MEDICATION OF ANTIBIOTICS AND ITS EFFECTS AMONG SCHOOL TEACHERS IN BIYAGAMA EDUCATIONAL DIVISION

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Misuse of antibiotics is becoming a serious issue in Sri Lanka which leads to a global public health problem. Antibiotics can cause severe reactions which require significant amount of cost of care. Literature indicates high rate of inappropriate usage of antibiotics. This study aimed to assess knowledge and practices regarding self-medication of antibiotic among school teachers in Biyagama educational division. A cross-sectional study was conducted in type 1AB schools in Biyagama educational division where 150 teachers (34 male and 116 female) got involved. Data was collected using interviewer-administered questionnaire to assess knowledge and practices concerning self-medication of antibiotics and after effects. Prevalence of self-medication with antibiotics was 53.3% (n=80). It was identified that the most commonly used oral antibiotic was Amoxicillin (n=123, 82%). Further, majority of participants (n=102, 68%) were unaware of proper antibiotic usage. Participants obtaining antibiotics directly from the pharmacy without a prescription were most commonly for cold (n=112, 74.7%), fever (n=75, 50%) and cough (n=89, 59.3%). Previous experience using antibiotics without prescription had been (n=58, 38.7%), whereas participants show an act of reusing antibiotics without instructions when similar symptoms appear (n=52, 34.7%) and stopping antibiotics when feeling better from symptoms (n= 37, 25.3%). Healthcare professionals' assistance is required in reducing self-medication of antibiotics. In conclusion, actions or intervention programs are mandatory to promote the appropriate usage of drugs.

Keywords: Antibiotics, Self-Medication

ANTI-INFLAMMATORY ACTIVITY OF AQUEOUS EXTRACTS OF FLOWERS AND STALKS OF APONOGETON CRISPUS AND APONOGETON RIGIDIFOLIUS

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Aponogeton crispus and *Aponogeton rigidifolius* are native *Aponogeton* plants in Sri Lanka. These are widely used in folkloric medicine. Recent pharmacological studies have established anti-diabetic, anti-inflammatory, anti-oxidant, anti-cancer and thrombolytic activities of *Aponogeton* species. Aim of this study was to evaluate the effect of *A. crispus* and *A. rigidifolius* on acute inflammatory response. *A. crispus* and *A. rigidifolius* flowers and their stalks were collected and the extract was prepared by standard ayurvedic method. Carrageenan (1%, 0.1 ml) induced paw oedema in Wistar rats model was used to evaluate the acute anti- inflammatory activity. One hour before the carrageenan injection, positive control 15 mg/kg dichlofenac sodium, negative control – distilled water and test samples (*A. crispus*- 90 mg/kg; *A. rigidifolius*- 90 mg/kg) were administered orally. Digital plethysmometer was used to measure the anti-inflammatory effects at every hour interval for 5 hours to see the paw oedema percentage inhibition and the effect was also compared with extract, control and standard. Carrageenan injection into the left hind paw induced oedema progressively and maximum oedema reached at 3rd hour. Dichlofenac sodium, *A. rigidifolius* showed the maximum inhibition of 61.3% and 62% respectively at the 3rd hour. *Aponogeton crispus* showed the maximum inhibition of 65.9% at the 4th hour and 60% at the 3rd hour. Aqueous extract of two plant species of *Aponogeton* showed a significant percentage inhibition of oedema in the hind paw and anti-inflammatory activities compared to control demonstrate that it will be useful for the management of acute anti-inflammatory disorders.

Keywords: Anti- Inflammatory, *Aponogeton Crispus, Aponogeton Rigidifolius*

THE RELATIONSHIP BETWEEN HIP ABDUCTOR MUSCLE STRENGTH AND ILIOTIBIAL BAND TIGHTNESS IN PATIENTS WITH CHRONIC LOW BACK PAIN ATTENDING DEPARTMENT OF RHEUMATOLOGY AND REHABILITATION OF THE NATIONAL HOSPITAL, SRI LANKA

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Low back pain (LBP) causes disability and hinders daily activities of general population. Despite extensive research, the exact cause of chronic mechanical LBP remains uncertain. There is inadequate evidence related to hip abductor muscle strength and iliotibial band (ITB) tightness among subjects with LBP. A descriptive cross-sectional study was conducted at National Hospital, Sri Lanka, between 103 individuals with chronic mechanical LBP, aged between 20-65 years. Oswestry Disability Index (ODI) was used to gauge the severity of LBP. Hip abductor muscle strength and ITB tightness was measured in all subjects. Mean age of the sample was 50.09 ± 11.163 comprising, 34% male and 66% female patients. Pearson's correlation revealed significant correlations in right ITB tightness and ODI (p=0.003, r=0.289), Left ITB tightness and ODI (p=0.005, r=0.275). Significant relationships were also present between right hip abductor muscle strength and ODI (p=0.030, r=-0.213) and left hip abductor muscle strength and ODI (p=0.050, r=-0.192). However, there were no correlation between hip abductor muscle strength and ITB tightness in the current study. Even though ITB tightness and hip abductor muscle strength were correlated to LBP, the relationship between hip abductor muscle strength and ITB tightness was not detected in the current study. However, it is recommended to incorporate exercises to minimize ITB tightness and to improve hip abductor muscle strength, in the interventions for patients with LBP. Extensive studies should be carried out to assess hip abductor weakness and ITB tightness.

Keywords: Low Back Pain, Hip Abductor Muscles, Iliotibial Band

THE RELATIONSHIP BETWEEN COGNITIVE FUNCTION AND DUAL TASK GAIT PERFORMANCE IN PEOPLE WITH A VESTIBULAR DISORDER VS ADULT HEALTHY CONTROLS

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The purpose of the current study was to investigate the relationship between the dual task gait performance and the cognitive function domain in patients with clinically diagnosed vestibular disorders. Authors hypothesized that cognitive type of tasks would have more impact on Functional Gait Assessment (FGA) than motor tasks and poorer cognitive function scores would affect single and dual FGA performance. In order to investigate these hypotheses, 40 persons with a vestibular disorder were tested and compared with 40 healthy controls for single and dual task gait and their cognitive function. Both groups performed the single FGA and repeated the FGA further three times with concurrently performed numeracy (FGAN), literacy (FGAL) and motor tasks (FGAM). The cognitive skills were tested using the Cambridge Neuropsychological Test Automated Battery (CANTAB) software. Mann-Whitney U test analysis showed a significantly poor performance in the patient group for all four tests (p=0.000) with lower means scores. The addition of a dual task led to a marked reduction in FGA performance in both groups (p = 0.000) but had no significant difference in the dual task cost. Further, significant correlations were identified between cognitive function scores and both single and dual task FGA performances in the patient group. Results indicate that the addition of a cognitive type of dual-task can affect more on the functional performance than a motor task in both vestibular patients and healthy persons. But the vestibular patients have significantly poorer performance in both single and dual task performances compared to the healthy. Moreover, these poor single and dual-task performances are related to poor skills in the cognitive function domain.

Keywords : Vestibular, Dual-Task, Cognitive Function

EFFECTS OF RESPIRATORY MUSCLE TRAINING (RMT) ON RESPIRATORY FUNCTIONS AND ROWING PERFORMANCES IN SRI LANKAN ROWERS: A RANDOMIZED CONTROL STUDY

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Respiratory muscle training is known to improve respiratory functions and performance in sportsmen. The aim of this study was to determine effects of a 12-week specific respiratory muscle training program on the rowing performance and respiratory functions in elite Sri Lankan rowers. A case controlled randomized study was conducted on 20 male rowers (test group n=11; control group n=9) aged 20-35 years during the competitive period. At the beginning of the study, assessment of lung volumes and capacities namely; peak inspiratory flows (PIF), peak expiratory flows (PEF), vital capacity (VC), forced vital capacity (FVC), forced expiratory volume in 1 second (FEV1) and FVC/ FEV1 were done using a portable spirometer while respiratory muscle strength (RMS), maximal inspiratory (PImax) and expiratory pressures (PEmax) were measured using a mouth pressure meter in all rowers. Performance was assessed by the 2000 m and 5000 m rowing ergometer. Subsequently, rowers in the test group were prescribed a respiratory muscle strengthening exercise program consisting of a warm up session, flexibility training, inspiratory and expiratory muscle strengthening while the control group was prescribed a "general exercise program" for non-respiratory muscles for a 12 week period after which the all respiratory parameters and performance were assessed. The mean ergometer time trial for test and control groups were 2000 m (6.3+ 0.2, 7.2+ 0.2 minutes) and 5000 m (18.2 + 0.7, 19.5+ 0.3 minutes) respectively. The mean lung parameters for the test and control groups were PIF: (2.5+ 0.6, 3.3+ 0.9), PEF: (14.5+ 1.2, 14.8+ 1.5), VC: (8.3+ 1.4, 7.9+ 1.5), FVC: (7.0+ 0.8, 6.4+ 1.4), FEV1:(6.0+ 0.9, 5.7+ 1.4) and FVC,/ FEV1: (1.2+ 0.1, 1.1+ 0.1) respectively, while the means for RMS and RMF were IMS: (134.4+ 36.8, 136.8+ 26.1), EMS: (187.4+ 45.4, 180.1+ 36.9), IMF: (25.4+ 14.9, 20.6+ 20.5) and EMF: (31.8+ 14.4, 29.0+ 28.4) respectively. The ergometer performance, PIF and PEF were significantly higher in the test group (p<0.05) while no significant difference was identified in inspiratory, expiratory muscle strength and fatigue between the two groups (p>0.05). Results suggest that respiratory muscle training has a beneficial effect on exercise performance and rowers' respiratory functions.

Keywords: Respiratory Muscle Strength, Lung Volumes, Exercise Performance

AWARENESS, KNOWLEDGE AND BELIEFS OF ANTENATAL EXERCISES IN SECOND TRIMESTER PREGNANT WOMEN ATTENDING CASTLE STEET HOSPITAL FOR WOMAN, COLOMBO 8, SRI LANKA

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Second trimester of pregnancy is an important period during fetus growth and health of pregnant women. Antenatal exercises during pregnancy are designed to minimize impairments and to promote health while a woman prepares for childbirth. This study was designed to analyze awareness, knowledge and beliefs regarding antenatal exercises in second trimester of pregnant women. A descriptive cross-sectional study was conducted among 250 second trimester pregnant women at Castle Street hospital for women, Colombo. Sociodemographic data, antenatal exercise awareness, knowledge and beliefs were assessed using an interviewer-administered questionnaire. Among 250 participants, 82.4% were aware of the existence of antenatal exercises. Advanced knowledge levels in antenatal exercises were 'poor' (52.4%) compared to general knowledge (22.8%). General knowledge levels had a significant relationship with religion ($p=0.007$), income level ($p=0.002$) and parity ($p=0.003$). Advanced knowledge was significantly associated with age ($p=0.034$), educational level ($p=0.003$), parity ($p=0.009$) and income level ($p=0.028$). 40.8% of participants had 'favorable' beliefs regarding antenatal exercises. Factors significantly associated with beliefs were income level ($p=0.000$), religion ($p=0.024$) and parity ($p=0.041$). Majority of participants had a satisfactory awareness level and a good general knowledge level regarding antenatal exercises. Advanced knowledge regarding each type of antenatal exercises and engagement in antenatal exercises has not reached a satisfactory level. As educational level, number of pregnancies and age had a significant association with advanced knowledge in antenatal exercises, adequate knowledge may landfill erroneous beliefs.

Keywords: Antenatal Exercises, Second Trimester, Pregnant Women, Awareness, Knowledge, Beliefs

THE EFFECT OF STORAGE TIME OF CITRATED WHOLE BLOOD SPECIMENS BEFORE CENTRIFUGATION ON RESULTS OF COAGULATION TESTING

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Citrated blood specimens received in some laboratories for coagulation testing such as prothrombin time (PT), Activated Partial Thromboplastin Time (APTT), and Thrombin Time (TT) are stored for long periods due to many reasons. The objective of this randomized complete block design study was to describe the effect of storage time of uncentrifuged citrated blood specimens on results of testing. Blood samples were collected from 40 selected patients coming to General Hospital, Kalutara. PT, APTT and TT tests were performed after phlebotomy at specified times up to 8hours (0-2 hours baseline, 4 hour and 8 hours at room temperature) using coagulation analyzer. The results were evaluated using paired t-test and P ≤ 0.05 was considered to be statistically significant. Mean PT, APTT and TT values of samples stored for 4 hours and 8 hours before centrifugation were compared with the mean values obtained at 0-2 hours. When samples were stored for 0-2 hours, 4 hours and 8 hours the mean(SD) PT were 20.96 (8.17), 21.85 (8.96) and 24.06 (10.17) respectively and the mean(SD) APTT were 42.77 (13.69), 48.27(16.29) and 54.03 (18.12) respectively while mean(SD) TT values were 16.16 (4.31), 18.04 (3.82)and 18.78 (4.04) respectively. When samples were stored for 4 hours and 8 hours at room temperature, significant differences were found in mean PT (p=0.001), APTT (p=0.001) and TT (p=0.001) compared to mean of samples stored for 0-2 hours. Storage of blood after collection for a longer period elicited a statistically significant increase in the normal PT, APTT and TT results and abnormal PT, APTT and TT results. Therefore, above tests should be determined within 2 hours of blood collection.

Keywords: Prothrombin Time, Activated Partial Thromboplastin Time, Thrombin Time

ISOLATION OF BACTERIOPHAGE FROM STARTER CULTURES OF YOGHURT AND FORMULATION OF A PHAGE-RESISTANT STARTER CULTURE

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Yoghurt is the best known of all cultured-milk products and is very popular all over the world. To manufacture yoghurt, bacterial cultures known as starters are used. Bacteriophage attacks on milk fermenting bacteria during yoghurt production process causes loss of entire batches of yoghurt resulting in economic losses to the company. Culture bacteria (*Streptococcus thermophilus* and *Lactobacillus bulgaricus*) in starter cultures (Direct Vat Set-DVS) were isolated using Eliker medium. Bacteriophage was isolated from affected yoghurt using host bacteria grown on M-17 medium. The bacteriophage attacked *Lb.bulgaricus* but not *St.thermophilus*. After further confirmation of phage attack using the setting delay of yoghurt, starter cultures used in MILCO Company were tested to find out resistant bacterial strains. Using bacteriophage resistant strain of *St.thermophilus* and *Lb.bulgaricus*, new starter culture was prepared and yoghurt samples were reset with different concentrations of culture bacteria at 1:1 ratio. Each yoghurt sample was tested for its setting time, rate of acidity increase and pH decrease to investigate the suitable concentration of culture bacteria to be used in the process. The optimum amount found was 1.5 ml from each of culture bacteria at 107 CFU/ml per 80 ml of milk.

Keywords: Eliker Medium, M-17 Medium, *Lactobacillus bulgaricus*, *Streptococcus thermophilus*

IS LABORATORY WASTE HANDLING SAFE? A LOCAL STUDY ON WASTE MANAGEMENT PRACTICES IN FIVE HISTOPATHOLOGY LABORATORIES

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Waste generated in histopathology laboratory is unique and proper disposal is mandatory to avoid harmful effects on people and environment. The objective of this project was to study current waste management practices in randomly selected five histopathology laboratories in Colombo district. Data was collected using semi structured questionnaires, observations and interviews. The study identified waste generated in histopathology laboratories under five categories: pathological waste, chemical waste, sharps and glass slides, paraffin blocks and general waste. The process of waste management in each centre was studied in the steps of segregation, handling, storage and disposal. Especially in the step of disposal of waste, each waste category was studied separately. Fixed specimens and body fluids were included under pathological waste. Fixatives, dehydrating agents, clearing agents and stains were the major components that were studied under chemical waste. Sixty percent of centres had universally accepted practices with regard to disposal of pathological waste, sharps and glass slides and general waste. Management of chemical waste and paraffin blocks were not satisfactory in majority of the five centres assessed. The study also revealed that most of the laboratories were aware of significant steps of managing waste generated within the pathology laboratory, although improper management practices are evident throughout the process. Finally, as workers of histopathology laboratories, one needs to aim to join the nation in protecting a green globe for the next generation.

Keywords: Histopathology Lab Waste, Management of Lab Waste, Global Standards

COMPARISON OF THE EFFECTIVENESS OF FIVE 'A' PLAN TO QUIT SMOKING BY SAILORS IN TWO POPULATION SAMPLES IN SRI LANKA NAVY

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Non-communicable diseases (NCDs) have become the leading cause of morbidity and mortality, and tobacco use is a recognized causal factor in the genesis of NCDs. The current smoking prevalence is 39% among males and 2.6% among females. Sri Lanka was the fifth country in the region to sign the WHO Framework Convention on Tobacco Control (FCTC) and the first country in the region to ratify it. Hence quitting smoking is very important health intervention and 5 A's (US-public health clinical practice guideline) is a recommended psychological intervention method for persons willing to quit smoking. A non-random purposive first sample of forty-seven sailors who were in the habit of smoking, diagnosed with non-chronic disease (NCD) in northwestern naval area in year 2013 was selected for study. A number of thirty smokers with 87% NCD patients were included in the second study sample in 2016 at northern naval area. 19.8% were in 20-29 age group, 66.6% in 30-39, 66.6% and 13.2% in 40-49 year age groups. Only 17% had advanced educational qualifications and 83% were junior sailors. Both samples were directed to brief intervention and 5 A's method (ask, awareness, assess, arrange, award) and follow-up for a 3-month period by naval nurses, counseling officers and public health inspectors. 72.34% of first study sample and 100% of second study sample quit/reduced smoking after 3 months, after commencing brief intervention and 5A method. Brief intervention and 5A's method can be used as an effective low-cost method to quit smoking. Age, educational status, discipline and seniority may have an effect on the outcome.

Keywords: Non-Communicable Diseases, Five 'A's Method

PREVALENCE OF IMMEDIATE ACUTE AND CHRONIC DISEASES AFTER FLOOD IN MAY 2016 IN WESTERN PROVINCE, SRI LANKA

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Storm Roanu that struck Sri Lanka on 15 May 2016 caused severe flooding and numerous landslides, particularly in the west of the country. Sri Lanka Navy deployed immediate disaster management teams including medical teams with other sister forces. This study was conducted to identify acute medical needs of medical disaster management at natural disaster situations and immediate relief actions with a proactive approach. Analysis data was done based on 2153 prescriptions out of a total 2490 cases treated at Western Province immediately after flood on basis of drug classification of British national formula-2014 according to biological systems. Study revealed that 24.9% prescriptions consisted central nerve system medicines indications of muscular skeleton/soft tissue pain and joints pain 21.1% drug preparations consisted of infectious diseases and 17.5% prescriptions consisted gastrointestinal system medicines. 12.7% of prescriptions of nutrition preparations were used as placebo for somatoform conditions. 12% of prescriptions included respiratory system medicines, while 10.74% prescriptions were for skin diseases, eye, ear and pharynx indications. Total of 2.4% prescriptions included medicines for hypertension, ischemic in heart disease medicines of endocrine system. The study suggests providing an outline of the risk factors for outbreaks after a disaster, reviewing the communicable diseases and care of non-communicable diseases likely to be important, and establishing priorities to address acute health needs in disaster settings. This approach may improve quality of care with minimal resources.

Keywords: Diseases, Flood, Western Province

AN ASSESSMENT OF DIFFERENT COPING STRATEGIES USED BY MOTHERS OF CHILDREN WITH CANCER IN APEKSHA HOSPITAL MAHARAGAMA

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The purpose of this study was to assess the different coping strategies used by mothers of children with cancer admitted to the national cancer hospital, Sri Lanka.

This study was conducted with 200 mothers of children who had cancers. Self-administered questionnaire was used to get information about their coping strategies. Data was analysed using SPSS version 23. Majority of mothers (56.5%) were in the age between 31 – 40 years and 58% of them were educated up to Ordinary Level. More than 75% children were diagnosed as having cancer for more than 6 months. 'Doing things with my children' (100%), 'Believing the religion / Gods (90%) and 'Investing myself in my children' (85%) were the most helpful coping strategies for mothers, while 'Over sleeping' (74%), 'Over eating' (71%) and 'Allowing myself to get angry' (67%) coping strategies were used as less helpful coping patterns. Doing things with their children and believing in religion has been the two main coping strategies used by the mothers of children with cancer. Relaxation and counselling programs to modify less desirable coping strategies such as over sleeping and over eating is also emphasized.

Keywords: Coping Strategies, Mothers, Children, Cancer

INCIDENCE AND RISK FACTORS OF INJURIES

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Injuries due to Road Traffic Accident (RTA), domestic accidents, work place injuries and intentional injuries lead to a large number of hospital admissions and cause a huge social and hospital burden. Possible preventive measures could lead to reduce these injuries. Presence ofknowledge gaps in these areas restricts the efficacy of interventions. The study was conducted to assess the incidence of different types of injuries, the risk factors on RTA, and evaluate the incidence and the risk factors for RTA injuries with the individual's socio-demographic characteristics. Patients admitted with injuries to the Base Hospital Kuliyapitiya over a period of month (n=210) were considered in this descriptive cross-sectional study. An interviewer-administered questionnaire was used to collect data. Data was analyzed using descriptive analysis. Number of admissions due to injuries during period of one month was 210. There were 87.6% (n=184) admissions due to unintentional injuries. Majority 76.2% (n =140) out of them were males. Most common age group that has undergone any type of injury was 31-40 years 21.9% (n=46). Unintentional injuries include RTA, work place accidents, leisure time accidents, injuries caused by violence and domestic accidents which represent by 52. 4% (n=110) 11% (n=23), 9.5% (n=20) 12. 4% (n=26) and 14. 8% (n=31) respectively. When considering RTA, motor bike accidents 58.2% (n=64) have led to most admissions. Risk factors that represent RTA were without driving license (42.9%), without helmet (26.7%), drowsiness (12.5%), alcohol influence (32.1%), dark or rainy day (53.6%), defective road (51.8%) and technical problems (10.7%). Most pedestrians (37.6%) have undergone RTAs while crossing the road. In this study the most common age group that has undergone any type of injury is 31-40 years. Motor bike is the most common vehicle for RTA and majority have not got driving license, and a considerable sample is under the influence of alcohol at the moment. Males have been subjected to injuries 3 times than females.

Keywords: Incidence, Risk Factors, Injuries, RTA, Alcohol Influence

AWARENESS ON WOUND CLEANING AND DRESSING AMONG NURSING UNDERGRADUATES IN UNIVERSITY OF PERADENIYA

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Wound cleaning and dressing is one of the main responsibilities of nurses and nursing undergraduates. Better awareness on wound cleaning and dressing minimizes wound infections, healing time, pain during the procedure, as well as duration of hospital stay. Indirectly this will minimize government expenditure on wound management and will enhance patient's quality of life. According to literature, there is a paucity of research on nurses' awareness on wound cleaning and dressing. Published data regarding this aspect in Sri Lanka is also scarce. This study aims to assess current awareness among student nurses of Faculty of Allied Health Sciences, University of Peradeniya. A descriptive, cross-sectional study was carried out collecting data from one hundred and fifty-one (151) student nurses using a self-administered questionnaire. The study revealed that nursing students of the faculty have sound knowledge in most aspects related to wound cleaning and dressing. Overall, their average knowledge score was 68 % and there was a significant positive correlation between the duration of clinical exposure and the mean score of the knowledge (= .83, p < .01). There are gaps in their knowledge with respect to different wound cleaning solutions and techniques, management of special wounds such as burn wounds, venous/diabetic ulcers, neonatal/infant wounds as well as on newly available dressing products in the market. Therefore, it is imperative to develop an effective educational program to enhance awareness and supervise undergraduates closely while performing rather than rely on self-reported data.

Keywords: Awareness, Wound Cleaning, Wound Dressing, Nursing Undergraduates

PREVALENCE OF MEMORY IMPAIRMENT AMONG OLDER ADULT PATIENTS ATTENDING UNIVERSITY MEDICAL CLINICS IN TEACHING HOSPITAL KARAPITIYA AND ITS EFFECT ON TREATMENT ADHERENCE IN LONG-TERM FOLLOW-UP

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Memory impairment is a major complaint among older adults. With aging, older people have to take more medications as they faced more medical conditions. Memory impairment can affect treatment adherence. Adherence to treatment is important to patients as well as to reduce the cost of health care system. This study was conducted in university medical clinics in Teaching Hospital Karapitiya (THK). Subjects were older adult patients (age over 60 years) who got treatments from university medical clinics in THK. Using descriptive cross sectional survey and interviewer administered questionnaire, data were collected from 300 patients, were analyzed using descriptive statistics including mean and standard deviations (SD) and presented by percentages, charts and tables. Pearson Chi Square test was used to test association between memory impairment and treatment adherence and also to test associations between memory components and treatment adherence. A total of 300 patients, 218 (72.7%) had no memory impairment and 82 (27.3%) had memory impairment. 14.6% of impaired memory patients had unsatisfactory level of treatment adherence and 73.2% of impaired memory patients had satisfactory level of treatment adherence. Results showed that there was no significant relationship between memory impairment and treatment adherence. Although the study has 27.3% of impaired memory patients, results suggest that there was no relationship between memory impairment and treatment adherence among older adults. Considering the impaired memory group their family support, monthly income and living situation were in good condition.

Keywords: Memory Impairment, Treatment Adherence

RELATIONSHIP BETWEEN BODY MASS INDEX, WAIST TO HIP RATIO AND BLOOD PRESSURE AMONG PERADENIYA UNIVERSITY STUDENTS

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The growing prevalence of obesity is recognized as one of the most important risk factors for development of hypertension. This study was done to identify the relationship between body mass index, waist to hip ratio and blood pressure among first year students in University of Peradeniya. Although there had been studies that have assessed these parameters and its risk factors for older adults and the elderly, there is a paucity of such data among young adults. Knowledge about these parameters and predisposing risk factors is vital in the modification of lifestyle and to enhance quality of life. The study was cross-sectional, carried out among 646 first year students in University of Peradeniya. A predesigned and pretested questionnaire was used to collect data. Body weight, height, waist and hip circumference and blood pressure were measured using standard equipment and procedures. BMI had significant positive correlation with systolic blood pressure (SBP) (r=0.383) and diastolic blood pressure (DBP) (r=0.336) for all subjects (p=0.01). Waist to hip ratio had positive correlation with SBP (r=0.273) and DBP (0.175) for males (p=0.01) and positive correlation with SBP (r=0.109) and DBP (0.118) for females (0p=0.05). Prevalence of hypertension among males was 3.15% and 1.41% among females. Family history of obesity and other chronic diseases, dietary habits, routine exercise and sports, sleeping pattern, smoking and alcohol habits were recognized as associated factors with obesity and hypertension. BMI and waist to hip ratio had a significant positive correlation with systolic and diastolic blood pressures. Biological and environmental factors were associated with obesity and hypertension.

Keywords: Body Mass Index, Blood Pressure, Waist to Hip Ratio

STUDY OF DYSMENORRHOEA AND ITS EFFECTS ON DAILY ACTIVITIES AND SELF-MANAGING TECHNIQUES AMONG FEMALE FACTORY WORKERS IN PILIYANDALA MOH AREA, SRI LANKA 2017

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Dysmenorrhea is a common health problem among females because it has effects on physical, mental and social activities. This study was conducted among female factory workers in Piliyandala MOH area, Colombo, Sri Lanka aiming to identify the prevalence of dysmenorrhea and to determine self-managing techniques and association with daily activities. A community based, descriptive cross-sectional study was conducted. Convenience sampling method was used and data collection was conducted using a pre-tested self-administered structured questionnaire. Data were analysed using SPSS 23 version. Majority (95.2%) experienced painful menstruation. Dysmenorrhea was mild, moderate and severe in 40.6%, 29.5%, 28.1% respectively. From the pain experienced participants, majority used self-managing techniques but 19.4% have not used any technique. Paracetamol (53%) was the drug of choice for pain relief. Other commonly used methods were coffee (28.1%), hot water treatment (17.5%), rest (10.1%) and coriander water (7.4%). Mefenemic acid and Ibuprofen were used only by 2.3% and 2.2%. Majority stated poor knowledge and fear on pain killers as the reason for not using pain killers and responded that taking pain killers may cause infertility. Shyness (13.8%) was the common reason for not seeking health advices. Most of the participants reduced their activity level during menstrual period (75.6%). Majority answered "no absenteeism" (64.5%) due to menstrual pain and had bath during menstruation. Majority with dysmenorrhea did not visit doctors to have medical advices or medications and shyness was the common reason for it. Current findings indicate that there was an association between dysmenorrhea and working ability but there were no significant effects on absenteeism. Educating female factory workers on pain-relieving methods is extremely important toimprove their productivity,working capacity and quality of life.

Keywords: Dysmenorrhea, Self-Managing Techniques, Female Factory Workers

KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS ORAL HYGIENE AMONG A COHORT OF 2ND YEAR UNDERGRADUATES ATTACHED TO NON-MEDICAL FACULTIES IN UNIVERSITY OF SRI JAYEWARDENEPURA

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Oral health is a state of being free from chronic mouth and facial pain, oral sores, oral and throat cancers, birth defects, periodontal (gum) diseases, tooth decay, tooth loss and other disorders that affect the oral cavity. Unhealthy diet, use of tobacco and alcohol, poor oral hygiene, specific infections are among the many causes affecting oral health. Young adults are a risk group of people for oral diseases since most of them are known to engage in tobacco smoking, alcohol use and have the risk behavior of getting exposed to Human Papilloma Virus (HPV). This study assesses the knowledge, attitudes/beliefs and practices towards oral hygiene among a selected group of undergraduates attached to non-medical faculties in University of Sri Jayawardenepura. A quantitative cross-sectional descriptive study was conducted using a self-administered questionnaire. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 21. Total sample number was 341. Majority (78.9%) showed adequate knowledge. Almost all (97.5%) participants had positive attitude towards oral hygiene. 74.8% in both sexes had moderate practices towards oral hygiene. It also showed that there is a significant correlation (Correlation is significant at the 0.01 level) between knowledge and attitude while there is no significant correlation between knowledge and practices and the attitudes and practices. Although knowledge was adequate and their attitudes were positive towards the oral hygiene, most of them showed only moderate practices which could affect oral health leading to oral diseases. Gum bleeding, presence of white sticky deposits on teeth, presence of bad breath was seen in more than half of the participants.

Keywords: Oral Hygiene, Knowledge, Practices

KNOWLEDGE, BELIEFS AND PRACTICES REGARDING PAP SMEAR SCREENING TEST AMONG SCHOOL TEACHERS IN SRI JAYEWARDENEPURA EDUCATIONAL ZONE IN WESTERN PROVINCE, SRI LANKA

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Cervical cancer is a female genital cancer, the fourth most frequent one in women. Primary cause of cervical cancers is recurrent infection with one or more of the oncogenic types of Human Papillomavirus (HPV). Cervical cancer is easily preventable with regular screening tests and follow-up. Even though Pap smear test is freely available, attendance for screening is very less. The objective of the study was to assess knowledge, beliefs and practices regarding Pap smear screening test among school teachers in Sri Jayewardenepura Educational Zone in Western Province, Sri Lanka. A descriptive cross-sectional quantitative study was conducted among 300 teachers aged over 30 years from five selected government schools. A validated self-administered questionnaire was used for data collection. Data analysis was done using SPSS Version 16.0. Total sample comprised of 40% of participants between age 30-39 years, 40% between age 40-49 years and 20% over 50 years of age. Out of 300 participants 96.6% had awareness about cervical cancer and 93.3% had awareness about Pap test. Majority have known about free availability of the Pap test. Findings reveal that participants possessed good knowledge regarding Pap smear test. Majority (60%) believed that Pap test is a good investment for health. Results showed that 33.3% of participants have undergone a Pap test at least once and majority of 66.7% have never undergone the test. From participants who have undergone Pap test at least once, 90% believed that the procedure is painful and 10% did not believe so. Some participants (39.9%) identified shyness as a reason for low participation of Pap test. The study concluded that even though participants possessed good knowledge regarding Pap smear test, majority have never undergone one. Some beliefs lead to low participation for Pap test such as feelings of shyness and pain, false confidence of never having cervical cancer, fear of tolerability of the results and myth-related concepts of Pap smear as a test for Sexually Transmitted Diseases.

Keywords: Knowledge, Beliefs, Practices, Pap smear test, School Teachers

PREVALENCE OF MENSTRUAL IRREGULARITIES AMONG SRI LANKAN NATIONAL LEVEL FEMALE ATHLETES AND FACTORS ASSOCIATED WITH MENSTRUAL IRREGULARITIES

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Menstrual irregularities affect the health and performance of female athletes. The purpose of this study was to identify the prevalence of menstrual irregularities and to identify the factors affecting menstrual irregularities among Sri Lankan national-level female athletes. The objective of this research was to identify the associations among menstrual irregularities and several factors; body weight, body fat, diet, eating disorders (ED), psychological stress and Resting Metabolic Rate (RMR) of athletes. A sample of 205 national-level female athletes between 18-25 years was selected from 20 competitive sports. "EAT-26" and "Perceived Stress Scale" questionnaires were used to identify ED and stress level of subjects, respectively. A three-day dietary record was used to determine nutrient intake. Body weight, body fat and RMR of subjects were also recorded. Spearman's rho correlation and binary logistic regression were conducted to analyse data. Body weight, ED, stress level, RMR, energy intake and sodium intake were associated with menstrual irregularities ($p<0.05$). Additional analysis indicated that body weight had relationships ($p<0.05$) with body fat, RMR and diet (water, sodium, vitamin A, vitamin E, vitamin B6 and folic acid). Further, significant relationships were observed between body fat and RMR, body fat and diet (water, sodium), ED and psychological stress, psychological stress and diet (calcium, vitamin B12, Iron, Zinc, fat and vitamin B6), and RMR and diet (carbohydrate and iron). It can be concluded that factors such as body weight, ED, stress level, RMR, energy intake and sodium intake are associated with menstrual irregularities in Sri Lankan national-level female athletes and the associated factors are related to each other.

Keywords: Menstrual Irregularities, Eating Disorders, National Level Athletes

KNOWLEDGE, ATTITUDES AND PRACTICES REGARDING CONTRACEPTIVE METHODS AMONG FEMALE GARMENT FACTORY WORKERS IN KATUNAYAKE FREE TRADE ZONE

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Contraception is the prevention of pregnancy by interfering with the process of conception. Information on knowledge, attitude and practice regarding contraceptive methods are scanty. Therefore, it is vital to study this aspect among female garment factory workers as an attempt to reduce abortion-related maternal deaths and unintended pregnancies of garment factory workers. A descriptive cross-sectional study was carried out in Free Trade Zone, Katunayake in Gampaha district and included 426 female garment factory workers aged between 15-45 years. Data was collected using a pre-tested self-administered questionnaire. The majority of the study population was Sinhala (90.4%), Buddhist (86.5%). More than half of the participants (52.5%) were married. The overall knowledge on contraceptive methods was poor (57.7%). Participants had good knowledge on oral contraceptive pills (OCP) and condoms relative to other methods of contraception. The knowledge on implants, LRT and vasectomy was very poor. It was revealed that 53% of participants had neutral attitudes on contraceptives while OCP was the most common (37.6%) method and the next preferred method was male condoms (26.2%). There was a significant association between age and marital status with knowledge and attitude on contraceptive methods. Significant association was not found between level of education, religion and nationality with knowledge, attitude and practice of contraceptive methods. It was identified that the health care professionals were the source of information for many participants of the study (73%) followed by books, magazines and leaflets (15%). Reproductive health educational programs are highly recommended to address the inadequate knowledge.

Keywords: Contraception, Garment Factory Workers, Health Educational Programs

AWARENESS AND PRACTICES REGARDING RABIES AND ANIMAL BITE MANAGEMENT AMONG ANIMAL BITE VICTIMS

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Animal bite is defined as injury caused by animal mouth and teeth, resulting in direct tissue damage, deep anatomical structure disruption, introduction of infectious agents and envenomation. Rabies is one of the most dangerous viral diseases transmitted through animal bites. In Sri Lanka, 26 cases were detected in 2015, while 24 died out of them and dogs were responsible for 75% of human rabies deaths. Management of bite wounds is essential in the management and prevention of complications of animal bites. Lack of public awareness towards animal bites is a major problem in prevention and control of rabies. Objective of the study was to assess awareness and practices regarding rabies and animal bite management among animal bite victims. Descriptive cross-sectional study was conducted among randomly selected 187 victims of animal bites who attended the OPD services of Awissawella Base Hospital. A pre-tested interviewer-administered structured questionnaire was used to collect data. Descriptive statistics and chi square test were used for data analysis and SPSS 23 was used as the statistical analysis tool. Age of respondents ranged from 15-60 years. Among the participants, 59% were males while 41% females. Among the victims 70.1% occurred due to dogs, 28.3% due to cats and 1.6% due to rats. 95.7% of the victims have washed the wound site with soap and water and 90.4% sought hospital treatment on the day of the bite. Only 17 (9.1%) of study participants knew microorganism as the cause of rabies. Knowledge was unsatisfactory regarding other animals that could transmit rabies and modes of transmission other than bites (39.8%). Moreover, excessive salivation was identified by majority (41.6%) as a clinical manifestation of rabies in animals, while knowledge of other signs such as altered personality (24.0%), fear to drink water (19.5%), fits (14.9%) were poor. Awareness and practices regarding rabies and animal bite management among the victims were not satisfactory. Public awareness programs on animal reservoir of rabies, modes of transmission and initial management of the wound must be conducted in order to prevent rabies and animal bites.

Keywords: Awareness, Practices, Rabies, Animal Bite, Victims