

Annotated Bibliography of Dissertations and Theses

Presented to PGIM by Postgraduate Trainees

2020

(Acc. Nos. D 4842 –D 4904; SC 01- SC 218)

Compiled By

M.P.P. Dilhani – Senior Assistant Librarian

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Library

PGIM Academic Centre

Postgraduate Institute of Medicine

University of Colombo

Sri Lanka

September 2021



**6th Impression
2020**

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PREFACE

It gives me great pleasure and pride to acknowledge the dedicated commitment and untiring efforts of the Senior Assistant Librarians and staff of the Postgraduate Institute of Medicine for the compilation of “Annotated Bibliography of Theses and Dissertations” submitted to PGIM by the trainees of MD and MSc. study programmes in 2020. This issue will be the 6th updated publication which will be available online for easy access at a low cost.

The PGIM, Colombo is the sole institution, which provides postgraduate training in all medical disciplines. One common feature of all these degree-awarding programs is the emphasis laid on research. Inclusion of a research project, culminating either in a dissertation, thesis or research publication is thus a ubiquitous feature of all these programs. Not all research conducted is published and hence this Bibliography will serve as a useful tool in the search for literature especially in relation to recent and locally conducted research.

Despite its name, the contents in the publication are not limited to a list of references but include the abstracts as well. This is an added feature, which will make the task of a literature survey less tedious. I am confident that the Bibliography will put to maximum use by all the postgraduate trainees and others. Thus strengthening the research culture, which would generate a wealth of evidence, enabling the provision of high quality health care services.

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FOREWORD

As secondary and primary information sources bibliographic indexes bridge the gap between generated literature and the end user. This compilation an attempt to bring together bibliographic details of dissertations, theses presented to Postgraduate Institute of Medicine (PGIM) by postgraduate trainees during the period of 2020 (Acc. Nos. D 4842-D 4904 ; SC 01-SC 218).

It is hoped that this bibliography while functioning as a bibliographic record of the areas of research engaged by the PG trainees will also serve as an indicator of the subject interests and priorities from the point of view of the profession.

This bibliography comprises four sections namely;

1. Subject Index
2. Author Index
3. Title Index
4. Keyword Index.

Bibliographic data pertaining to documents including the annotations are given in the main section which is arranged alphabetically under the name of the author. Therefore, this file function as an author index as well. Each entry assigned as a sequence number which functions as the unique identifier of the entry. The title, Examinations, and the Subject index refer to the main file through this sequence number where detailed information could be found. Annotations in the main file are mainly based on summaries or abstracts given by respective authors but with necessary modifications and abridgements. In the keyword index, MeSH database and Google scholar used for assigning keyword for this compilation. Each bibliographic reference is associated with a set of MeSH terms that describe the content of the item.

A sample entry of a record of the main file is given below.

Author	Title	Examination and Year	Abstract	Dissertation No.
0002.Ananda, J.B.A.S.	An evaluation of health information management system at a Tertiary care Hospital in Sri Lanka.	MSc. Biomedical Informatics – 2018		D 4650
Abstract Introduction: There are evidences in support of improvement of quality of healthcare by implementation of electronic health information system. On the other hand, shortcomings in designing, development and implementation strategies of health information system lowers its potential to achieve the quality of healthcare. The main objective of this study was evaluation of an existing Health Information Management System at Teaching Hospital Peradeniya, Sri Lanka using the <u>DeLone</u> and McLean model for information system success.				

I take this opportunity to express my gratitude and sincere thanks to Professor Senaka Rajapakse who always provide his guidance to uplift library academic activities. My special thanks are due to Mrs. Chandima Wadasinghe, Senior Assistant Librarian, PGIM and Mrs. L.K Weragala, Senior Staff Assistant, PGIM providing their continuous support to make this publication success. I should also thank all staff of the library PGIM to helping us to carry on library academic activities in many ways.

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Annotated Bibliography of Dissertations and Theses

Presented to PGIM by Postgraduate Trainees, 2020

(Acc. Nos. D 4842 –D 4904) , (SC 01- SC 218)

Abstracts

Clinical Pharmacology

0001.Rathnayaka, R. M.M. K.N.

**Clinico - epidemiology of drug overdose in a Tertiary Care Hospital in Sri Lanka.
MSc. Clinical Pharmacology and Therapeutics – 2019 SC 0197**

Background: If a drug is ingested or administered as the quantity greater than recommended or generally practiced, it is known as drug overdose or drug poisoning. Recently, deliberate self-poisoning using medicinal drugs is becoming popular in both urban and rural areas of Sri Lanka.

Objectives: To describe the epidemiology and clinical manifestations following drug overdoses in adults and children in the region of Ratnapura district.

Methods: A prospective clinical study was conducted in Teaching Hospital Ratnapura over one year commencing from September 2018.

Results: There were 212 (22%) patients with drug overdose from which adults were 202 (95.3%) and paediatric overdoses were 10 (4.7%). Most were young females (128; 60%). Commonly affected age group was 11-30 years (164;77%). Majority of people were unemployed (148;70%) and next 7% was garment workers (n=15). The commonest overdosing agent was paracetamol (114: 53.8%) and next anti-epileptic drugs (16;7.5%) and psychiatric drugs (14;6.6%). Most patients (102; 48%) were admitted to hospital within 1-4 hour of the ingestion (median 2 hrs and IQR 2-4 hrs) from Ratnapura (62; 29%) then from Kuruvita (21; 10%), next from Gallella (12; 6%). In whole group, smokers were 43 (20.3%) and alcoholics were 42 (19.8%).

Most of patients (86; 40.6%) were treated at hospital for 2 days (mean 2.79 days, SD 1.37, 1QR 2-3 days). Decontamination was done for 76% (n=161) of patients.

Gastrointestinal symptoms including nausea and vomiting occurred prominently and they were 42% (n=89) and 53 % (n=113) respectively. Epigastric pain was observed in 40 (19%), vertigo in 28 (13%) and confusion in 11 (5%). Serious complications were detected in 15 (7%) cases from which ECG changes 7 (3.3%), respiratory failure

5 (2.4%), acute liver failure 4 (1.9%), acute kidney injury 3 (1.4%) and hypotension 3 (1.4%). Six (2.8%) were treated at intensive care unit from which 5 (2.4%) were intubated. There were 2 (0.9%) deaths and the case fatality rate of drug overdose was 0.9%.

Conclusions and Recommendation: Drug overdoses are common in adults in intentional type. Young females are mostly affected and the commonest overdosing agent is paracetamol. In this contest, younger people should be educated and if possible over-the counter usage of paracetamol should be controlled in the country.

Keywords: Overdose; Poisoning; Drugs; Paracetamol; Sri Lanka

Community Dentistry

0002.Gammulle, K.A.

Oral hygiene status, gingival status and knowledge on periodontal diseases among pregnant mothers attending antenatal clinics in Piliyandala Medical Officer of health area.

MSc. Community Dentistry – 2020

SC 0156

Introduction: Gingival and periodontal changes during pregnancy are well known. The vascular and hormonal changes in pregnancy induce new periodontal disease or aggravate the existing disease in a pregnant mother. Periodontal diseases are documented to increase the risk of adverse pregnancy outcomes.

Objective: The purpose of the current study was to determine the oral hygiene status, gingival status, and knowledge on periodontal diseases among pregnant mothers attending antenatal clinics in Piliyandala MOH area.

Method: This was a descriptive cross-sectional study that recruited 576 pregnant mothers in second and third trimesters of pregnancy, attending antenatal clinics in Piliyandala MOH area. The multistage cluster sampling method was utilized with probability proportionate to size technique to recruit pregnant mothers from each of the six antenatal clinics. Systematic sampling was used to select mothers from each antenatal clinic. A pre-tested interviewer administered questionnaire and a pre-tested oral examination sheet were used for data collection. The collected data were entered into SPSS version 21. The mean, median, and percentages were calculated to describe the data. The chi-squared test was used to analyze the associations between variables.

Results: Results of the study showed that 61.6% of pregnant mothers had poor oral hygiene status, 66% of them had moderate to severe gingivitis, Nearly 67% had poor

knowledge on periodontal diseases. 47.7% of pregnant mothers did not know that there was a higher risk of periodontal diseases during pregnancy. Only 39.4% of pregnant mothers identified plaque as the primary aetiological factor for periodontal diseases. A statistically significant association between knowledge on periodontal diseases and oral hygiene status was evident ($p = 0.009$). The association between knowledge on periodontal diseases and gingival status was also found to be statistically significant ($p = 0.011$) at a 95% confidence level.

Conclusions & Recommendations: Most of the pregnant mothers in the sample had poor oral hygiene, moderate to severe gingivitis, and poor knowledge of periodontal diseases. The results of the current study can be utilized for planning oral health promotion programmes for pregnant mothers in Piliyandala MOH area.

Keywords: Oral hygiene status, Gingival status, Knowledge on periodontal diseases, Pregnancy

0003.Jinadasa, B.K.G.T.

Dental fluorosis among 15 year old school children in Kurunegala district; risk factors and its association with dental caries and oral health related quality of life.

MD Community Dentistry – 2019

SC 0020

Background: As endemic dental fluorosis is a problem throughout the world, prevalence of dental fluorosis is assessed periodically in order to observe the trends and to assess the effectiveness of preventive measures. The three National Oral Health surveys conducted in Sri Lanka have shown that the prevalence of dental fluorosis has increased with time. Epidemiological studies have identified several risk factors for dental fluorosis. Consumption of fluoridated water, fluoride supplements, infant formulae, and use of fluoridated toothpastes have been shown to be associated with an increased risk of dental fluorosis. As fluoride in drinking water is identified as the main cause for dental fluorosis, and fluoride also has a protective effect against dental caries, there is a need to determine the fluoride level which could maximize caries prevention while minimizing dental fluorosis.

In Sri Lanka a few studies have been conducted to determine the prevalence of dental fluorosis. However, they have several limitations. Also, there is a paucity of information related to the double burden of dental fluorosis and dental caries. If the level of fluoride in drinking water is adjusted to safe levels for consumption, it could minimize the burden of dental fluorosis. Although some of the risk factors for dental

fluorosis are known, it is important to determine whether there are new emerging risk factors for this condition in Sri Lanka.

Objective: To determine the prevalence, severity and risk factors of dental fluorosis and its association with dental caries and oral health related quality of life in 15-year-old school children in the Kurunegala district.

Methods: The study comprised of 3 stages. The first stage of the study involved the validation of the child perception questionnaire. A descriptive cross-sectional study was conducted among 150, 15-year-old school children in Kurunegala district to determine face, content and construct validity of the questionnaire. The second stage consisted of a cross-sectional study to determine the prevalence, severity and spatial distribution of dental fluorosis. The sample for this part included 989 students selected using a multi-stage cluster sampling with probability proportionate to size technique. Further associations between dental fluorosis and dental caries, dental fluorosis and oral health related quality of life as well as the optimum fluoride level that would minimize dental fluorosis were determined in this part. Binary logistic regression analyses were used to determine the independent associations between dental fluorosis and dental caries as well as oral health related quality of life. The third stage of the study included a matched case-control study to determine risk factors for dental fluorosis and the sample consisted of 204 students who were matched according to gender.

Results: The prevalence of dental fluorosis was 51.7% and 41.5% when Thylstrup and Fejerskov score > 0 and Thylstrup and Fejerskov (TF) score > 1 were considered as cut-offs for dental fluorosis respectively. Of those with dental fluorosis, a majority (20.9%) had a TF score of 2 which is considered as the mild form of dental fluorosis according to Dean's index. Only 0.5% had a TF score of 6 which was the highest severity observed for any participant in this study. With regards to the intra-oral distribution of dental fluorosis, the premolars were the most affected teeth and the least affected were the central incisors. The fluoride level in the drinking water of the sample ranged between 0.0-1.9 ppm and prevalence of dental fluorosis increased with the increase in the fluoride level in drinking water. From the spatial distribution map of dental fluorosis it was evident that areas with dental fluorosis were closer to the border with Anuradhapura. Around 33.4% of the sample were affected with dental caries and the mean Decayed Missing and Filled Teeth (DMFT) and Decayed Missing

and Filled Tooth Surfaces (DMFS) were 0.66 (Standard Deviation=1.2) and 1 (Standard Deviation = 2.2) respectively. Presence of dental fluorosis was significantly associated with dental caries in bivariate as well as multivariate analyses.

Those who had dental fluorosis had lower odds of getting dental caries. The fluoride level in drinking water was not associated with the presence of dental caries. Oral Health Related Quality of Life (OHRQoL) of participants when measured using the Child Perception Questionnaire 11-14 was not affected by the presence of dental fluorosis. The optimum fluoride level in drinking water that would minimize dental fluorosis was assessed using a ROC curve and this value was 0.225 ppm. A Receiver Operating Characteristic curve or the binary logistic regression model was not able to elicit an association between fluoride level in drinking water and dental caries. With respect to risk factors for dental fluorosis, only the fluoride level in drinking water and parental level of education emerged as significant predictors. Type of toothpaste used or aspects related to toothpaste usage was not identified as risk factors for dental fluorosis in this endemic area of dental fluorosis.

Conclusions and Recommendations: The prevalence and severity of dental fluorosis reported in the present study is low and it may be due to the fact that Kurungala is situated in the intermediate zone of Sri Lanka. Mild to moderate dental fluorosis was inversely associated with dental caries and dental fluorosis was not associated with OHRQoL. According to the findings the fluoride level in drinking water should be reduced to a level of around 0.2 ppm to minimize dental fluorosis and at this level, the prevalence of dental caries would also be low. Therefore, if water defluoridation is to be implemented in Kurunegala district it is important that fluoride levels in drinking water be reduced to 0.2 ppm because at this level there would also be a protective effect against dental caries. As fluoride level in water is the main risk factor for dental fluorosis, it is important to identify areas with high fluoride levels in drinking water to initiate water treatment programmes. Use of GIS is a handy tool for plotting of high fluoride areas. Use of fluoridated toothpaste was not associated with dental fluorosis. To confirm or refute this finding, further research is indicated especially using a prospective cohort study design.

Such studies would eliminate problems of recall bias. In light of the findings of this study, fluoridated toothpaste could be used in endemic as well as in non-endemic areas, to prevent and control dental caries.

Keywords: Dental fluorosis, Dental caries, Optimum fluoride level in drinking water, Oral health related quality of life, Risk factors

0004.Kosgallana, K.M.S.H

Effectiveness of an intervention to improve health and oral health related quality of life of oral cancer patients who receive radiotherapy with or without Chemotherapy in a tertiary referral Centre in Sri Lanka.
MD Community Dentistry – 2019 **SC 0119**

Background: Oral cancer denotes a multifaceted public health challenge as the number one cancer in males in Sri Lanka. Radiotherapy (RT) is used as a relatively common mode of treatment for oral cancer, yet it affects negatively on patient's oral health related quality of life (OHRQOL) and health related quality of life (HRQOL). HRQOL and OHRQOL of oral cancer patients who receive RT has not been assessed previously in Sri Lanka and none of the researches had been carried out on an intervention to improve oral health of oral cancer patients receiving RT with or without chemotherapy.

Objectives: To determine HRQOL, OHRQOL, their associated factors and to evaluate an intervention, designed to improve HRQOL and OHRQOL of oral cancer patients who receive RT with or without chemotherapy at the National Cancer Institute, Maharagama.

Methods: The study composed of four components. Component I was a cross sectional study conducted to validate modified European Organization for the Research and Treatment of Cancer Quality of Life Questionnaire for Oral Health (modified EORTC QLQ-OH15) among 85 oral cancer patients who receive RT with or without chemotherapy. Component II was a prospective longitudinal study conducted on 90 oral cancer patients who receive RT with or without chemotherapy. The OHRQOL and HRQOL were measured before RT, during last week of RT course and three months following the completion of RT. EORTC QLQ specific for head and neck cancer (EORTC QLQ-H&N35) and EORTC QLQ-C30 generic questionnaires were used to assess HRQOL and modified EORTC QLQ-OH15 was used to assess OHRQOL. Intervention package consisted of oral care guideline 'and

educational leaflet was designed in component III, using results of component II and results of in-depth interviews, literature and with the expert opinion. Component IV was an interventional prospective study conducted among newly diagnosed 42 oral cancer patients who receive RT with or without chemotherapy.

Comparison of change in the OHRQOL and HRQOL of intervention group was performed with historical control group.

Results: Modified EORTC QLQ-OH15 had shown good judgmental validity and factor analysis revealed three factor model. The domains were named as eating problems”, Gum and Speech problems” and Soreness “and single item Teeth”. Cronbach’s Alpha coefficients for all the domains were more than 0.8. The tool had shown a very high responsiveness to change.

Components II, study sample was consisted of 87.8% of males and most were in 50-69 age group. The medians of the eating problem “and Gum and Speech *problem*” domains were 20.0 (IQR: 66.7-33.3) and 8.3 (IQR: 0.0-18.8) respectively at baseline and they had increased up to 100.0 (IQR: 86.9-100.0) and 50.0 (IQR: 25.0-58.3.0) respectively during last week of RT. The change in OHRQOL of the sample from baseline to last week of RT course, baseline to three months after RT and last week of RT to three months after RT were statistically significant. Civil status ($p=0.011$) and income ($p=0.015$) have shown significant association only with eating problem domain from baseline to last week of RT. HRQOL of oral cancer patients had deteriorated drastically during last week of RT course compared to baseline. Treatment modality was associated significantly with HRQOL changes occurred in relation to all the five functional scales ($p<0.05$) from baseline to three months after RT. Change of OHRQOL due to RT showed very high significant association with the change of HRQOL in oral cancer patients.

When considering intervention study The “*Eating problem*” and *Gum and Speech “problem*” domains and the “*Teeth*” item showed very much less oral symptoms in intervention group than the control group from baseline to last week of RT course.

From baseline to three months after RT all the domains and items of EORTC QLQ-H&N35 had shown lower reporting of symptoms in intervention group than the control group except “*Trouble with social eating*” and “*Feeding tube*”. After adjusted for confounding factors intervention group had 5.6, 12.2 and 9.9 times higher OHRQOL in relation to changes “*Eating problem*” domain than control group from

baseline to last week of RT, Baseline to three months after RT and last week of RT to three months after RT respectively.

Conclusions and Recommendations: OHRQOL and HRQOL of oral cancer patients who receive RT with or without chemotherapy had deteriorated drastically during last week of RT course from the baseline level. Although, OHRQOL and HRQOL three months after RT had improved from last week of RT, they had not returned to the baseline level with the current routine practice. OHRQOL and HRQOL were significantly associated with each other. The intervention designed in this study was effective with regard to improving OHRQOL and thereby improving HRQOL of the oral cancer patients who receive RT with or without chemotherapy. Introducing a proper oral care guideline for the oral cancer patients who receive RT could be highly recommended to improve their OHRQOL and HRQOL.

Keywords: Oral cancer, Radiotherapy, Modified EORTC QLQ-OH15, Oral health related quality of life, Health related quality of life

0005.Mututanthri, S.A.

Patterns of sugar intake and its association with dental caries status and general nutritional status among 04-05 year old preschool children in the Colombo district.

MD Community Dentistry – 2019

SC 0018

Introduction: High sugar intake is a well-known risk factor for a plethora of diseases among adults and children. Even though different health authorities have played much attention on sugar intake of people, hitherto, according to the published literature in Sri Lanka, there are no available data on sugar intake patterns among adults or children or factors that predispose those patterns. Among children, dental caries and obesity are the main adverse health effects resulted by high sugar intake. In Sri Lankan context early childhood dental caries (ECC) is a significant public health problem with high prevalence and persisting for many decades, and obesity is an emerging health problem still with a low prevalence.

Objective: To assess the patterns of sugar intake, identify the factors associated with it, its association with dental caries status and general nutritional status and to identifying safe patterns of sugar intake among 04 to 05-year-old preschool children in the Colombo District.

Methods: This study was conducted as two components.

Component I

Development of the food frequency questionnaire: A cross-sectional descriptive study was carried out among 518 preschool children in the Colombo district. They were selected from all the 13 district secretariat divisions in the Colombo district. Three interviewer-administered 24 hour dietary recalls were collected from each participant. To obtain more comprehensive data on childrens' diet, these dietary recalls were taken on two weekdays and one weekend day. By using these findings, all the sugar containing food and beverage items consumed by the children were extracted. To identify the sugar-containing foods reputed recipe books, recipes from local food manufacturers and food label were searched. All these identified sugar containing food items were included in the food list of the FFQ. Thus, the list of foods included in the FFQ can be considered as a well representative and comprehensive list to assess the sugar intake of preschool children in the Colombo district.

The validation of the FFQ was established by conducting a cross-sectional study among a sample of 108 preschool children who are 04 to 05 years of age, in the Colombo District, which is the same population the FFQ is going to apply. In the present study, the 24-hour dietary recall was used as the reference method. The FFQ was applied twice to the same population in six weeks interval to assess the reliability.

Component II

A descriptive cross sectional study was conducted to identify the patterns of sugar intake among preschool children then a cross sectional analytical study was done to identify the factors associated with sugar intake patterns and identify the association between sugar intake and possible consequences like dental caries and overweight or obesity. Then a safe sugar intake pattern for preschool children was identified that will not increase the risk of dental caries or obesity. This study was conducted in 86 preschools among 813 preschool children and their parents. These 86 clusters were selected from all the 13 district secretariat divisions in the Colombo District utilizing probability proportionate to size sampling technique. From each district secretariat division, the required numbers of preschools were selected by simple random sampling technique.

Using the registered preschool list of the district secretariat division random preschools were selected using computer-generated random numbers. Data collection was done in two days. Mainly the primary caregiver of the child was invited for the

data collection. On the first day questionnaire 1, questionnaire 2 and the newly developed food frequency questionnaire (FFQ) used to collect data. A three day dietary record was given to fill at home. On the second day weight and height of the children were measured. Intra oral examination was carried out.

Results: A 75 item quantitative food frequency questionnaire (FFQ) was developed to assess the patterns of sugar intake among preschool children. The median (IQ Range) sugar intake levels from FFQ1 was 64.46 (39.9 – 111.52) grams/ day, and the corresponding value for 24h recalls 56.95 (29.38 – 102.77) grams per day, and FFQ2 was 61.78 (41.33 – 97.82) grams/ day. Outcome was assessed by the Wilcoxon sign rank test, and no difference in mean sugar intake from FFQ1 and three 24h recalls, and FFQ2 and three 24h recalls. Spearman correlation between FFQ1 and three 24h recalls were 0.98 and FFQ2, and three 24h recalls were 0.78. Bland and Altman plots for sugar intake from FFQ1 and three 24h recalls, and FFQ2 and three 24h recalls showed acceptable agreement throughout the range of intake. When compare sugar intake from FFQ1 and FFQ2 (same FFQ applied twice to the same population after two weeks). These two applications showed Spearman correlation of 0.68 and interclass correlation coefficient of 0.55. Bland and Altman plots also showed a acceptable agreement throughout the range of intake between two applications of FFQ. Therefore, can be concluded this newly developed FFQ as a valid and reliable instrument to assess sugar intake patterns among preschool children in the Colombo district.

The median amount of free sugar intake among preschool children in the Colombo district was 57.9 g/ day with an interquartile range of 33.2 - 95.8 g/ day. The median frequency of sugar consumption was four times/ day with an interquartile range of 2.7 – 6.1 times/ day. When consider this sugar intake as a percentage of total energy requirement of the child (this was used to simulate the total energy intake) the median was 21.1% with an interquartile range of 12.5% - 35.9%.

Comparing this sugar intake of preschool children with WHO guideline on sugar intake for adults and children which suggested limiting the free sugar intake less than 10% of total energy intake, the sugar consumption of the current population of preschool children was almost twice the recommended level.

Multivariable analysis elicited multiple statistically significant associations with sugar intake patterns of preschool children when controlled for other factors included

in the model. Maternal education level and dental clinic attendance were emerged as statistically significant negative associations with the amount of sugar intake. Ethnicity being other than Sinhala, presence of school going siblings, eating while coming back from preschool and eating while watching television had statistically significant association with higher intake levels of sugar.

The prevalence of dental caries among the 04 – 05-year-old preschool children in the Colombo District was 42.9%. The median decayed missing and filled teeth (dmft) value was four teeth with an interquartile range of 02 – 08 teeth.

Multivariable analysis identified only two statistically significant associations with the level of dental caries (Measured by dmft score) when controlled for the other factors included in the model. Those were sugar intake as a percentage of total energy requirement ($\beta = 0.47$, $p < 0.001$), and Frequency of sugar intake ($\beta = 2.16$, $p < 0.001$). This indicates that the sugar intake is the single most predominant determinant of the development of dental caries. When compare the sugar intake patterns among children with dental caries and children without dental caries all nine sugary food group intake was significantly high among children with dental caries.

Prevalence of overweight was 1.3%, and obesity was 0.8% among the 04 – 05-year-old preschool children in the Colombo District. Children were classified into three groups as underweight, normal weight and overweight according to the WHO criteria weight for height of children under five years of age and according to BMI of children above Five years of age to compare their sugar intake patterns. There was no significant difference in amount of sugar intakes among three weight categories, and there was a significant difference in sugar intake as a percentage of total energy requirements. The underweight children had a highest sugar intake as a percentage of total energy requirement, and overweight/ obese children had the lowest sugar intake as a percentage of total energy requirement. Though high sugar intake was generally considered as associated with overweight and obesity, the present findings suggests children who were taking high percentage of their total energy requirement from sugar have a more possibility of becoming underweight.

The safe maximum amount of sugar intake that can be recommended for a 04 - 05-yearold child that will not increase the risk of dental caries or the risk of being overweight or underweight was 4% of total energy requirement which is approximately 12 g/ day. When this was converted to teaspoons, it is about 3 flat

teaspoons/ day. The safe maximum frequency of sugar intake that can be recommended for optimum dental health is only once a day.

Conclusion and Recommendations: Free sugar intake is the single most important risk factor for the development of dental caries. Primarily the amount and then the frequency of sugar intake are the most important determinant of the dental caries status of preschool children. This effect of high sugar intake on development of dental caries cannot be mitigate by other factors like brushing teeth twice or use of fluoride particularly in toothpaste.

High intake of free sugar as a percentage of total energy requirements has more propensity to affect the normal growth of the child and they can become underweight. Relevant authorities should pay attention on this massive problem of excess sugar intake of preschool children and appropriate measures should be taken to address this.

Keywords: Sugar intake, Preschool children, Dental caries, Nutritional status, Overweight, Food frequency questionnaire

0006.Perera, P.B.A.

Oral health status and associated factors in hospitalized psychiatric patients in Colombo district.

MSc. Community Dentistry - 2018

D 4884

Objectives: The objective of the study was to describe the oral health status and associated factors in hospitalized psychiatric patients in Colombo district, including the prevalence and severity of dental caries, status of oral hygiene, oral health practices and oral health care seeking behavior.

Methods: A cross sectional study including 385 hospitalized psychiatric patients was carried out in all three hospitals which had in-ward psychiatric patients in Colombo district. A random sample was selected from each hospital according to the proportion of admissions in the year 2013. An interviewer administered questionnaire was used to ascertain the information on socio demographic factors, oral health practices and oral health care seeking behaviors. A clinical examination of the oral cavity was done to assess the status of dental caries and oral hygiene. Decayed, missing and filled teeth (DMFT) index was used to measure dental caries, and the mean DMFT to measure the severity of dental caries. The Sillness and Loe plaque index was used to measure the oral hygiene status. The type of the psychiatric illness was extracted from the bed head ticket of the patient. Statistical analysis of data was done using Mann-Whitney

U test or Kruskal-Wallis H test depending on the number of categories of the variable. Mean DMFT 3 was taken as the cut off point for the severity of dental caries, $p < 0.05$ was accepted as statistically significant.

Results: Oral health status of hospitalized psychiatric patients in Colombo district was found to be very poor. Prevalence of dental caries was, 89.4%. The mean DMFT of these patients was 10.6, with mean number of 1.4 decayed, 8.7 missing teeth and 0.4 filled teeth. The average plaque index for the patients was, 1.96. Oral hygiene practices of hospitalized psychiatric patients were unsatisfactory. Only 90.6% brushed their teeth at least once a day and 2% never brushed. Only 69.8% of the patients who brushed teeth used a tooth brush. Oral health care seeking behavior of these patients also was unsatisfactory.

It was found that 17.4% never sought dental care. The study revealed that 77.6% did not seek dental care because they did not perceive a need to do so. Seventy percent of the patients who perceived that they do not have any oral health problems had a mean DMFT more than 3. Majority of the patients (69.5) % visited a dental clinic due to tooth ache and tooth extraction was the last dental treatment for 76.4% of the patients. The study revealed a significant association between the severity of dental caries and the age of the patient ($p < 0.001$), level of education ($p < 0.05$), last occupation ($p < 0.05$), marital status ($p < 0.05$), not using a tooth brush ($p < 0.001$), oral hygiene ($p < 0.001$), duration since the last dental visit ($p < 0.001$), type of the dental clinic visited ($p < 0.05$), reason for the last dental visit ($p < 0.05$), last dental treatment received ($p < 0.001$), present oral health problem perceived by the patient ($p < 0.05$) and type of the ward they were in ($p < 0.05$).

Conclusions and Recommendations: psychiatric patients hospitalized in Colombo district, have poor oral health with a high prevalence and severity of dental caries and poor oral hygiene. The severity of dental caries was significantly associated with their oral hygiene, oral hygiene practices, oral health care seeking behavior, type of the ward. Therefore, emphasis should be given to integrate preventive oral care in to the clinical management of psychiatric patients. Regular and routine dental checkups, preventive dental treatments, improving the skills of the health care staff to supervise and assist the patients' oral hygiene practices are some of the interventions that may improve the oral health of these vulnerable patients.

0007.Premarathne, D.G.S.M

Self-medication for oral health conditions among residents of Piliyandala MOH area.

MSc. Community Dentistry – 2020

SC 0187

Introduction: Self-medication is a human behavior in which people self-diagnose their ailments and treat by themselves without obtaining services from physicians. Self-medication is widely used for oral health problems and many potential risks including antimicrobial resistance is associated with inappropriate use of self-medication.

Objective: The aim of the study is to assess self-medication and its associated factors for oral conditions among residents of Piliyandala MOH area.

Methods: A community based descriptive cross-sectional study was employed by using multistage cluster sampling combined with probability proportionate to size technique among residents of Piliyandala MOH area. Total sample size of 450 was selected from 15 clusters in 15 PHM areas. Data collection was done by using pre tested interviewer administered questionnaire which comprised of two parts. Chi square and fisher's exact test was used to determine the statistical association between variables with the level of significance set at " $p \leq 0.005$ ".

Results: Prevalence of self-medication for oral conditions was reported as 68.9%. However, only 43.0% of them had the intention of using self-medication as a permanent treatment. Majority (62.6%) had used self-medication for dental pain. Approximately 86% of the participants had used western/Ayurveda drugs or preparations alone or in combination, while 14.8% had used only the home remedies. Paracetamol was the commonest drug used by the participants (50%). Main source for obtaining drugs or preparations was pharmacy or grocery (64.8%) and mostly the pharmacists had dispensed medicines according to the signs and symptoms of the patients. Perception of oral health conditions as minor illnesses was the main reason mentioned by participants (67.4%) for resorting to self-medication. Low level of education, unskilled or informal employment categories, lack of awareness on adverse effects of self-medication, low house hold income levels were associated with self-medication with statistical significance.

Conclusion and Recommendation: Prevalence of self- medication for oral conditions was high and among them majority had used the western drugs or

preparations. Increase awareness of both public and professionals and enforce laws for safe use of drugs should be carried out while taking actions to increase utilization of oral health services.

Keywords: Self-medication, Oral health, Health seeking behaviour

0008.Senavirathne, A.M.K.

Prevalence of psychological distress and associated factors, of parents having children with cleft lip and palate disorders: attending cleft lip and palate clinic, Dental Hospital Peradeniya.

MSc. Community Dentistry – 2016

D 4854

Having children with deformities like cleft lip and or palate can be affects parent's psychological equilibrium and as a whole it can be affect their family as well and it can lead to change the social role of the parent. This study was carried out to describe and quantify the prevalence of psychological distress among parents who were having children with cleft lip and palate and anticipated factors which were associated with developing psychological distress.

This study was a hospital based cross sectional study and this was carried out among 384 parents were having children with cleft lip and palate deformity and attended to cleft lip and palate clinic Dental hospital, Peradeniya, during the period of August to December 2016. Interviews were carried out by using questionnaire consisted of three parts. Part 1 consisted of social, economic and general questions to assess socio demographic profile of the parents and psychological distress assessed by using GHQ 30 questionnaire. Part 3 was used to gather clinical details of the affected children with Cleft lip and palate by using their clinical records.

Out of 384 parents who were accompanying their child to the clinic, 62.5% were mothers, and fathers participation was 37.5%. Majority of parents were Buddhists. (n=303, 78.9%) and belong to the < category of Sinhalese (n=300, 78.1%). Most of the parents have educated up G.C.E O/L (n = 159, 41.4%). One third of parents were employed (n=114, 29.7%). Most parent (n=340, 88.5%) were legally married. Almost fifty percent of them were having monthly family income more than 25000LKR. Parents of (n=102, 26.6%) were having only the affected child. Out of all (n=301, 78.4%) were not personally suffering from any diseases. Majority of (n=233, 60.7%) parents have seen babies with cleft lip and palate before having their own baby. Males were the majority among children (n=198, 51.6%) and commonest cleft type was complete unilateral cleft involving lip and palate (n=124, 32.3%) and least common

type was cleft in the soft palate (n=32, 8.3%).commonest disability reported was feeding problems.

Prevalence of psychological distress was (n=132, 34%). Parental psychological distress was significantly associated with the family structure (p=0.001),family income (p=0.011).Marital status (p=0.001) having seen children with cleft lip and palate before (p=0.045),Children's age less than 2years (p=0.001). Three types of clefts were also significantly associated with the parental psychological distress namely isolated Cleft in the soft palate(p=0.006), bilateral complete cleft involving both lip palate (p=0.023) and cleft lip only(p=0.001). Disabilities associated with particular cleft like feeding problem, dental problems of and speech problems were also significantly associated (p=0.0001) with parental psychological distress.

Keywords: Cleft lip and or palate, Psychological distress, Associated disabilities of clefts, GHQ 30 questionnaire.

0009.Udayamalee, S.R.M.I

Contact sports related oro dental trauma burden, its impact and an educational intervention to improve knowledge and practices on oro dental trauma prevention and dental first aids on 13 to 18 year old school children engaged in contract sports in Colombo district in Sri Lanka.

MD Community Dentistry – 2019

SC 0019

The escalating field of sports and vigorous recreational activities are invariably associated with an increased risk of sports-related injuries which is a part and partial of Oro Dental Trauma (ODT). ODT among contact sports players are a well - established scenario in the region. However, there is a paucity of research findings in Sri Lanka. Synergistic to the information gap, there is limited attention to ODT prevention and dental first aid practices among the contact sports players as well as their coaches. The contact sports considered in this study are rugby, hockey, basketball, football, boxing and martial arts.

As a result of ODT, the oral health-related quality of life has a detrimental impact. Therefore, the enumeration of data on ODT associated with contact sports and introduction of ODT-prevention and dental first aid package encompassed with a computer software are important initiatives. They help to improve the knowledge and practices on ODT prevention and dental first aid and this would pioneer the link between sports and dentistry, leading to the initiation of sports dentistry in Sri Lankan context.

Objectives: The objectives of this thesis was to assess the contact sports related ODT prevalence on 13 to 18 years- old contact sports players, knowledge and practices on ODT prevention and dental first aid of them and their coaches, to develop and validate a novel instrument named Adolescent Oro Dental Trauma Impact index (AODTII) and to assess the impact of ODT on oral health-related quality of life on adolescents in school-based and hospital based settings. Moreover, it aimed at the improvement of knowledge and practices on ODT prevention and dental first aid, implementing a custom- designed intervention as a computer software and a pamphlet targeting the adolescent players.

Methods :The study had four main components. The first component was the development and validation of a novel instrument named Adolescent Oro Dental Trauma Impact Index (AODTII) using robust methodologies such as content validation; exploratory factor analysis, with a sample of 140 contact sports players; confirmatory factor analysis, with another sample of 132 contact sports players and reliability analysis.

In the second component, the prevalence of ODT, knowledge, and practices on ODT prevention and dental first aids were assessed by a cross-sectional descriptive study with a sample of 1425 contact sports players in Colombo district-school settings. The sample consisted of 481 players with ODT occurred during a recall period of six-months elicited by the oral examination with the Andreson's classification of traumatic dental injuries and by a self- administered questionnaire. They were assessed on the perceived impact of ODT, using the AODTII. Moreover, all of the coaches and "masters-in charge of sports" (n=86) of this main study sample were assessed on their knowledge and practices on ODT prevention and dental first aid, using a self -administered questionnaire.

The third component was to assess the changes in the perceived impact followed by dental restorative treatments on adolescents with ODT; who sought care in the public dental hospitals in Colombo District. The developed and validated AODTII was used to assess the impact of ODT prior to, immediately after and post three- month restorative dental management of ODT.

The fourth component was to administer the developed ODT prevention and dental first aid intervention package (a computer software programme and a pamphlet) to improve the knowledge on ODT prevention and dental first aid.

The package was introduced to a sample of 445 contact sports players, and the expected outcome was assessed immediately after and at post three- month intervention.

Results: The first component which was the tool development and validation part of the current study, initially identified 28 latent variables. Those were reduced into 12 latent variables by principal component analysis and segregated into four main factors according to the loading of variables considering their Eigenvalues in the Exploratory Factor Analysis (EFA). The Confirmatory Factor Analysis (CFA) identified the construct validity of the AODTII by the indices of RMSEA (Root Mean Square Estimate of Approximation) value of 0.08 (95% CI 0.06 – 0.10) and the Goodness of Fit index of 0.84. AODTII is entrusted with homogeneity and convergent and discriminant validity.

The reliability was assured with Cronbach's alpha more than 0.7 for each subcomponent and the total value of 0.768 (95% CI=0.630 – 0.921). It is a reliable index with an ICC of m0.888 (95% CI= 0.813 -0.943). Its validity was ensured in terms of Content Validity Ratio (CVR) of 88.33. It emerged as an acceptable and feasible index which measured the impact of ODT on adolescents with the cut off value of 66.6%. Below the cut off value were considered as good impact and the above were considered as poor impact. Accordingly, the developed and validated instrument of AODTII is valid and a reliable index of 12 items under four factors capable of assessing the impact of ODT on adolescents in Colombo district, in Sri Lanka.

The prevalence of ODT among the contact sports players was 35.9%. (95% CI = 33.3 – 38.5) with male preponderance as 39.3% (95% CI = 36.7 - 41.9) of males were affected while only 28.0% (95% CI = 25.6 - 30.4) of females were affected. Most prevalent type of ODT was uncomplicated dental trauma (only enamel and dentinal tissues involved) with 15.8% (95% CI = 13.8 – 17.8) followed by complicated trauma (with pulpal involvement and/ or tooth luxation) with 8.0% (95% CI = 6.5 – 9.4) and the soft tissue injuries with 12.1% (95% CI = 10.3 – 13.8). Among the contact sports considered, boxing imposed the highest risk for ODT while football manifested the lowest risk.

On assessment of the level of knowledge and practices regarding the ODT prevention and dental first aid among the contact sports players, only 33.1% of the study sample had a satisfactory level of knowledge while 26.3% had a satisfactory level of

practices. Only 32.9% of their coaches and “master in-charge of sports” were with a satisfactory level of knowledge and 30.2% of them had a satisfactory level of practices.

Oro dental trauma had imposed a poor impact in 58.4% (95% CI =55.8 – 61.0) of contact sports players. The Poor impact was due to social/ peer pressure in 52.4% while it was due to physical impact in 47.8% of them. This was prominent among the females, who were above the age of 15 years.

In the third component, a significant improvement in the perceived impact could be observed in adolescents with ODT, followed by the restorative dental management, in public dental hospital settings, in Colombo district. Poor impact which was perceived by 80% of patients, (median AODTII= 77.5) reduced to 65% (median AODTII= 70.8) at the immediate post-restorative stage while it was further reduced to 48% (median AODTII= 68.7) in three -month post restorative management. There was a pronounced, statistically significant difference ($p=0.000$) between the pre and post three -month groups could be seen in pair-wise comparison assessed by the Friedman’s ANOVA post-hoc test.

In the fourth component, the proportion of adolescents with the unsatisfactory level of knowledge and practices was reduced significantly in post three -month assessment with a statistically significant difference ($p <0.000$), compared to the base line followed by the intervention. When satisfactory and unsatisfactory practices were assessed for its correlates in multivariate logistic regression; the improvement of knowledge by the intervention had an odds ratio of 3.7 (95% CI = 2.166 -7.905) while all other confounders did not play a pivot role in the model. This proved that the ODT preventive intervention package was successful in terms of improving knowledge and practices on ODT prevention and dental first aids.

Conclusions and Recommendations: AODTII can be used as a valid and a reliable instrument to assess the impact of ODT at community and hospital settings. AODTII can be used as an advocacy tool to enlighten on the substantial burden of the impact of ODT. It could be used by the health programme planners and education stakeholders to demand more investments on ODT preventive logistics and strategies. Using the AODTII, the oral health care providers will have a better understanding on their adolescent patients with ODT, in-turn, rendering a better treatment outcome.

ODT emerged as a public health problem among the contact sports players of the Colombo district denoting a significant prevalence and it was predominantly present among males. Most prevalent injury type was uncomplicated dental trauma followed by soft tissue injury. Among the contact sports, boxing imposed the highest risk for ODT followed by rugby, hockey, basketball, martial arts and football respectively. It should be stressed to use properly fitting mouth guards in all the contact sports to mitigate the ODT and consequently its impact.

The annual workshops conducted for coaches and “master’s in-charge of sports” by the Ministry of Education and the Department of Sports Development, should incorporate oral health care professionals to address on oral health promotion. Dental professionals (especially the dental surgeons in Adolescent Dental Clinics) and dental therapists should impart knowledge and develop skills of the potential groups such as contact sports players/ coaches, on the appropriate on-site emergency management procedures of dental injuries at all levels of contact sports participation.

Measures should be taken on providing professionally built, adequately fitting custom- mouth guards by the public dental hospitals in Colombo district, as an initial step.

It should be emphasized on the education of adolescents by using most contemporary methods that sustain in the long run. Since adolescents respond to internet and software applications (apps) promptly, pedagogical approaches should be best designed as computer-based programmes and applications.

Oro dental trauma in adolescent can be recognized as a potential oral health problem given their prevalence and consequences, which needs much attention on prevention and impact mitigation.

Keywords : Oral Health-Related Quality of Life, Oro dental trauma, Contact sports injuries, Sports dentistry, Impact of dental trauma, Dental first aids, Dental software.

0010.Vidanapathirana, S.P.

Prevalence of and association of selected factors with work related musculoskeletal disorders among dental surgeons working in government health Institutions of Western province, Sri Lanka.

MSc. Community Dentistry – 2018

SC 0153

Background: Work-related musculoskeletal disorders are injuries or disorders of the muscles, nerves, tendons, joints, cartilage and spinal discs which the work environment and performance of work contribute significantly to the condition and/or the condition is made worse or persist longer due to work conditions.

Objective: To determine the prevalence and association of selected factors with Work-Related Musculo Skeletal Disorders among the dental surgeons working in government health institutions of Western Province.

Methods: This was a descriptive cross-sectional study carried out among 332 dental surgeons working in government health institutions of Western Province. A pretested self-administered questionnaire was used for data collection. Association of socio-demographic, workplace related factors with work-related musculoskeletal disorders and impact were assessed using chi square test.

Results: Prevalence of the work-related musculoskeletal disorders was 64.2% (N=332) and disorders in other body regions; neck (39.8%), lower back (31.6%), shoulder (31%) and wrist (25%). Mean age of the study population was 41 years and majority were females (71.4%). Nearly 36% of dental surgeons were working in Outpatient Department and 51% of the dental surgeons were working in both government and private sector. The median years of service experience was 11 years. Median number of clinical hours per week was 40 hours. Median number of patients treated was 100 per week. Difference in prevalence of work-related musculoskeletal disorders among age up to 40 years and more than 40 years, service experience up to 11 years and more than 11 years, among dental surgeons with postgraduate qualifications and grade dental surgeons were statistically significant. Significant difference in work related musculoskeletal disorders was observed among dental surgeons who work up to 40 years of age and more than 40 hours. None of the other workplace design and practice related factors were significant with prevalence of musculoskeletal disorders. Associations between work-related musculoskeletal disorders with daily work affected and sleeping disturbances were significant. Association of shortened working time, absence from work, use of analgesics and

seek for medical care were not significant with work-related musculoskeletal disorders.

Conclusions: The prevalence of work-related musculoskeletal disorders was high which was significantly associated with several socio-demographic and work design/practice factors.

Recommendation: Scientific researchers are needed to evaluate the impact and risk factors to minimize occurrence of musculoskeletal disorders.

Keywords: Work-related musculoskeletal disorders, Dental surgeons, Associated factors

Community Medicine

0011. De Silva, L.S.D

Prevalence and correlates of anxiety disorders and effectiveness of an intervention to reduce anxiety among children aged 13-15 years attending Sinhala medium government schools in Colombo district.

MD Community Medicine- 2020

SC 0205

Introduction /Background : Anxiety (AD) being the most prevalent psychological problem among children and adolescents remain largely unrecognized due to their nature. If untreated AD could lead to many adverse outcomes.

Objectives : To assess the prevalence and correlates of anxiety disorders and effectiveness of an intervention to reduce anxiety among children aged 13-15 years attending government Sinhala medium schools in Colombo district, Sri Lanka.

Methods :

Component 1 : The SCARED Child was culturally adapted , translated to Sinhala and its judgmental validity was ensued. The instrument was validated among 423 children aged 13-15 years in Colombo district by assessing construct validity through confirmatory factor analysis, and criterion validity using the diagnosis made by a consultant psychiatrist as the gold standard, developing clinically validated cut-off values using ROC curve. The reliability was assessed using internal consistency and test-retest assessment.

Component 11 : A cross sectional study included 1524 children aged 13-15 years old selected by a multiage stratified cluster sampling from Sinhala-medium government schools in Colombo district.

The presence of anxiety disorders and its correlates were assessed using a pre-tested self-administered questionnaire that included validated screen for Child Anxiety Related Disorders (SCARED) Child Sinhala associated factors were analyzed using bivariate and multivariate analysis.

Component 111: A cognitive behavioral therapy (CBT) based universal anxiety prevention package was developed based on research evidence, expert opinion and recipients' values. A cluster randomized controlled trial was conducted involving to schools among 720 children in a randomly selected Selected educational zone in the Colombo district, randomizing 18 schools each to study and control arm. Outcomes (level of anxiety using SCARED child depression using DASS-21 and self-esteem using Rosenberg Self Esteem Survey) were compared at baseline, post –intervention and at 3 months follow up, using bivariate analysis followed by multivariate analysis controlling for clustering effect and confounding variables, using marginal linear regression.

Results: The five factor model of culturally & translated SCARED Child Sinhala was confirmed. It showed a sensitivity of 85% (95% CI-74.61% -93.25%) and a specificity of 91.3% (95% CI 88.00% - 94.07%) and high reliability (Cronbach's alpha 0.87 and test retest correlation -0.74).

The adjusted prevalence of anxiety disorders was 12.3% (95% CI 9.8% to 14.9% factors significantly associated with having anxiety disorders at the multivariate analysis included being female (OR – 3.0 , 95% CI 2.0-4.4p-0.001). residing away from the family (OR -4.6, 95% - 1.2-17.8, p-0.027) , Low to moderate Self Esteem (OR = 1.6, 95%v CI 1.1= -2.5, p=0.022) having stress (OR =2.3, , 95% , CI 1.5-3.6, p-0.001) , having depression (OR = 2.5, 05% CI 1.4-4.5 , p=0.001), higher anxiety sensitivity (OR = 6.2, 95% CI 4.3- 9.0 p-0.001. Higher behavior inhibition (OR = 3.2, 95% , CI 2.1-4.7, 0.001) , attending tuition classes for 5-7 days per week (OR =2.0, 05% CI=1.9-4.3, p, 0.001), non –engagement in sports activities (OR -1.6 95% CI 1.1-2.6,.028 , having a sibling/s less than one year of age (OR -2.905% CI 1.2-66, p-0.015) , fathers low level of education (OR=2.0 , 95% CI 1.1-3.8 p=0.044) mother engaged in foreign employment (OR – 5.3, 95% CI 2.0-13.9p= 0.001) having an insecure attachment style (OR 2.7, 95% (CI 1.8-4.0,<0.001) , and unfavorable maternal tearing behavior (OR =2.9 , 95%CI 1.7-4.0, maternal p< 0.001) and unfavorable maternal rearing behavior (OR -2.9, 95% CI 1.7-4.9, p<0.001).

In the cRCT , comparing the study and control arms by using marginal regression model with coefficient by Generalized Estimation Equation, anxiety level had no significant difference ($p=0.024$, 95% CI -0.055-0.006, $p=0.1150$ at post intervention, but a statistically significant reduction ($p=0.096$, 95% CI -0.186-0.005, $p=0.018$) with a small effect size at follow up. There was no statistically significant difference in level of depression both at post intervention (OR -0.422, 95% CI 0.177-1.9952). For self-esteem level, there was a statically significant increment with a a small effect size at post-intervention ($p=0.811$, 95% CI 0.314-1.300, $p=0.001$), but not at the follow up ($p=0.435$, 95% CI 0.276-1.145, $p=0.211$).

Conclusion and Recommendations: The SCARED Child Sinhala is a valid and reliable instrument to assess AD in adolescents and it could be used for screening purposes in the community. The prevalence of AD is high and is associated with multiple personal family and educational factors. The CBT based universal package is effective in reducing anxiety and increasing self esteem level but not the depression level. This package could be used in Sri Lankan school set up to reduce anxiety and enhance the maternal health capabilities of adolescents.

Keywords: Anxiety disorders, Children, CBT based universal.

0012. De Silva, P.G.K.

Parental monitoring its associated factors and the relationship with the risk behaviours of adolescents (14 – 16) years of Sinhala medium government schools in Denuwara education zone, Kandy district.

MD Community Medicine - 2020

SC 0198

Introduction: Adolescence is a critical stage with variations of its physical, psychological and social development, where adolescents exposed to the society as independent individuals for the first time. Parental monitoring is considered as an essential parenting practice having a combination of parent and adolescent activities and behaviours. Studies have shown that monitoring is affected by many parent, adolescent and family related factors. Also, it is evidenced that better monitored adolescents are less involved with risk behaviours.

Objectives: The objective of this study was to adapt, translate and validate a tool to assess parental monitoring perception and to determine its associated factors and the relationship with the risk behaviours of adolescents (14-16 years) in Sinhala medium government schools and to explore and describe the perception and experiences of

parents of adolescents on parental monitoring in Denuwara Education Zone, Kandy District.

Methodology: The study had three components with different study designs. Parental Monitoring Scale, developed by Stating and Kerr (2000) was culturally adapted, translated to Sinhala language and validated to be used to assess parental monitoring perception of school going adolescents of the age group of 14-16 years in Denuwara Education Zone during the component I of the study. Statistical analyses were carried out to test the construct validity using SPSS version 22 (multi trait scaling analysis, principle component analysis) and LISREL 9.2 (confirmatory factor analysis). The reliability of the tool was assessed using internal consistency and test-retest method. A school based cross sectional analytical study was conducted in the Denuwara Education Zone the second component. A sample of 1350 school going adolescents aged 14-16 years were recruited applying Multi-staged cluster sampling with probability proportionate to the size method. Level of parental monitoring perception of adolescents and the sources of monitoring were described. The factors associated with the parental monitoring perception of adolescents and the relationship with adolescents' perception of parental monitoring and their involvement of selected risk behaviours were determined. Information on associated factors and the risk behaviours were assessed using a self-administered questionnaire developed for the study. Statistical analysis was done using SPSS version 22.0.

Third component was a qualitative study done using twelve focus group discussions. One hundred and seventeen parents of school going adolescents were selected from multi- stage stratified sampling method. Parent's perception about their own monitoring practice was explored and their monitoring experiences were shared during the discussions using a semi structured mediator guide questionnaire.

Results: The tool consisted of 23 items following validation. Confirmatory factor analysis confirmed it's original four factor structure with a combination of acceptable fit indices (SRMR of 0.063, CFI <0.9 and RMSEA with 0.061). The reliability assessment gave satisfactory results with a Cronbach's alpha value of 0.89. Results of this validation study confirm the fine psychometric properties of the instrument to be utilized.

A high parental monitoring level was reported by 24.9% (95% CI: 22.2-27.0) of adolescents in Sinhala medium government schools of Denuwara education zone. Amongst sources of parental monitoring, parental control showed the highest median level of perception among adolescents (4; IQR 4.2–5) while parental solicitation showed the lowest median value (3.4; IQR 3.2– 4.1) of the three sources of parental monitoring perception of adolescents.

Age (aOR=2.2; 95% CI: 1.7-2.87) and sex (aOR=1.9; 95% CI: 1.53-2.57) of the adolescent, education level (aOR=1.35; 95% CI: 1.02-1.79) and working status of the mother (aOR=2.2; 95% CI: 1.57-3.09) were the socioeconomic factors that showed a statistical significant association with parental monitoring perception of adolescents. Among the family and relationship factors assessed, parental monitoring was significantly associated with living with both parents at home (aOR=0.5; 95% CI: 0.32-0.91), parental trust (aOR=0.6; 95% CI: 0.37-0.92) and having many friends (aOR=3.3; 95% CI: 1.52-7.13). Parent adolescent relationship status, parent adolescent communication, pending free time with parents, relationship status with siblings as well as friends were identified as factors not associated with parental monitoring perception of adolescents when the other significant factors were controlled.

Among the risk behaviours assessed, hitting or threatening someone ($p=0.003$), bullying ($p=0.001$) and hanging out with inappropriate peer groups ($p=0.034$) showed significant association with low level of parental monitoring perception of adolescents. However, use of any substance (alcohol, tobacco and other illicit drugs) did not show a significant association with the perception of parental monitoring of adolescents.

Perception about monitoring their adolescents were expressed by parents under different themes. Most parents understood it as an unintentional act by them and very few understood it as an intentional activity. Parent's perception varies based on their attitudes based on culture and expectations and sex of the adolescent plays a major role for the parent's monitoring perception. Parents identified different strategies of monitoring while accepting that parents' own childhood experiences plays a major role in practicing parental monitoring. Furthermore, they came across few barriers they are facing while practicing monitoring their adolescents to the maximum.

Conclusions and Recommendations: The Parental Monitoring Scale (PMS) was a valid and reliable tool to assess parental monitoring perception of school going adolescents (14-16 years) in Sinhala medium government schools. There is a significant lower proportion of the adolescents with a high level of parental monitoring perception and many factors are associated with it. Parental monitoring perception of adolescents significantly associate with their involvement of risk behaviours during adolescence. Future studies recommend to further assessment of parental monitoring concept among different epidemiological profiles, evaluating its causality nature for different adolescent behaviours. Parental monitoring can be introduced in parenting intervention programs targeting quality parenting practices and aiming quality parent adolescent relationships to achieve their adolescent child's wellbeing.

Keywords: Parental monitoring perception, Adolescents, Risk behaviours, associated factors

0013.Dilhani, W.N.S.

“Psychosocial needs and psychological distress of the primary caregivers of children & adolescents with cancers, at National Cancer Institute, Maharagama and the outcome of an intervention to address their emotional and informational needs.”

MD Community Medicine – 2019

SC 0009

Introduction: Identifying and addressing the psychosocial needs and distress of primary caregivers (PCG) of children and adolescents with cancers (CAAWC) is emerging globally, as a component which should be incorporated into the quality cancer care.

Objective: To describe the psychosocial needs, psychological distress and associated factors among primary caregivers of children and adolescents with cancers at National Cancer Institute (NCI), Maharagama (Apeksha Hospital at present) and to assess the outcome of a psycho-educational intervention to address their emotional and informational needs.

Methods : This study consisted of two phases and phase one had two components.

Phase 01: Component 01- Development and validation of an interviewer-administered, needs and knowledge assessment questionnaire (NKAQ) based on the literature and findings of Focus Group Discussions (FGD) conducted among PCG of

CAAWC. Judgmental validity of the developed NKAQ was established by a group of experts in relevant fields.

Component 02- A descriptive cross-sectional study was conducted among 180 PCGs of CAAWC who were in post-diagnosis stage of between one-four months duration, attending NCI Maharagama. Study instruments were the NKAQ which contained questions to assess psychosocial needs (47 items) and knowledge on childhood cancer caregiving (32 items) and GHQ-30 for the assessment of the psychological distress. Associations were sought between caregiver-related factors, sick child-related factors and needs, knowledge, and distress by conducting bivariate analysis using chi-square for proportions and further multivariate analysis applying, binary logistic regression model.

Phase 02- A psycho-educational intervention was developed and validated based on the findings of phase one of the study. A quasi experimental study was conducted including 45 participants into each arm, to evaluate the outcome of the developed intervention on caregivers' knowledge and distress". Baseline and post-intervention (in four-week and 12-weeks) assessments were done. Pre-post comparison and comparison among two groups were carried out using the chi-square test for proportions and further analysis, utilizing GHQ score and knowledge score was carried out using the Mann – Whitney U test.

Results- Twenty-two PCGs participated for FGDs and saturation point was reached by the fourth discussion. Themes which could be identified during the analysis of FGDs echoed the psychosocial needs already known in the literature. In the cross-sectional study, a total of 170 PCGs completed the questionnaire with a response rate of 94%. Among the assessed need items, under seven major need areas, the top five unmet needs identified were, consecutively emotional needs, financial needs, informational needs, practical needs, need of family and social support. All study participants had at least one item of unmet psychosocial needs.

Having a lower education level showed a significant association with a higher level of unmet psychosocial needs (OR=4.990; CI=1.96-12.72).

Only 18% of PCGs had a good overall knowledge level on childhood cancer caregiving. Among all the assessed knowledge domains, awareness on the available supportive care services was found to be very poor among the majority of PCGs. Good knowledge was found to be associated with less distress levels of PCGs (OR

=2.46; 95% CI= 1.04 – 5.83), higher level of education (OR = 4.14; 95% C I =1.73- 9.93) and employed state (OR=2.52, CI =1.07 -5.93). Almost all the PCGs were psychologically distressed (97.6 %; CI = 95.3% - 99.9%) during post-diagnosis one-month to four-months period, irrespective of the factors related to the PCG or child's condition. However, being the mother of the sick child showed a statistically significant association (OR = 2.47; 95% CI = 1.06 – 5.820) with distress. Phase 02- The developed and piloted Psycho-educational intervention, addressing caregivers' emotional and informational needs was found to be effective in improving knowledge on caregiving ($Z = -5.01$, $p < 0.001$) and reducing distress levels ($Z=-3.48$, $p < 0.001$) among childhood cancer caregivers, in the short term.

Conclusion and Recommendation :Almost all PCGs of CAAWC who were at early stages of diagnosis are highly distressed and having a lot of unmet psychosocial needs. Interventions such as the piloted Psycho-educational intervention should be implemented to address their emotional and informational needs, improving their preparedness for caregiving.

Keywords: Childhood cancer, Caregivers, Psychological distress, Psychosocial needs, Informational needs, Emotional needs, Psycho educational interventions.

0014.Faiz, F.F.M.

Pattern of using reverse osmosis purified water for consumption and factors associated with its usage among residents of medical officer of health area Welikkanda.

MSc. Community Medicine – 2019

SC 0159

Introduction: As a public water source establishing of reverse osmosis purified water plants become one of the effective solutions for the mystery disease of Sri Lanka known as Chronic Kidney Disease of Unknown Origin (CKDu).

Objective: To determine the pattern of using reverse osmosis purified water for consumption and factors associated with its usage among the residents of Medical Officer of Health area Welikanda.

Methods: A descriptive cross-sectional study was conducted among 506 households. Two staged randomized cluster sampling technique was applied. An interviewer administered questionnaire used to collect data. Data was analyzed using statistical package for social sciences (SPSS version 23). Chi square test was performed to assess associations.

Results: Respondent were females (64.2%) and falls in age category 25-44 years (50.8%). Currently (68%) consuming reverse osmosis water, (54.9%) using only for drinking purpose. Younger age, being Sinhala Buddhist, lower income, adequate information and taste of osmosis water were significantly associated with knowledge ($p < 0.005$). Being female, younger age, being Sinhala Buddhist, lower income, adequate information and taste of osmosis water, knowledge were significantly associated with attitudes ($p < 0.005$), younger age, lower education, having good knowledge and attitudes, amount of water distribution, distance to the plant, travelling time, cost for travelling, availability of manpower, service charge at the plant were significantly associated with consuming reverse osmosis water ($p < 0.005$).

Conclusion: Great number of households in Medical Office Health area Welikanda were using reverse osmosis purified water. Streamlining the reverse osmosis unit's installation, maintenances and regular monitoring proper purification process including water quality are recommended. Facilitating consumption of reverse osmosis water, strengthening awareness improve knowledge and attitudes, studies on impact on long term use are also recommended.

Keywords: Reverse osmosis water, Water source selection, Pattern of consumption

0015.Fernando, E.H.K.

Dating violence among undergraduates in the western province: magnitude, associated factors and effectiveness of an educational intervention in improving knowledge and attitudes towards a healthy relationship.

MD Community Medicine - 2019

SC 0007

Introduction: Dating violence is a major public health issue which has failed to gain recognition in the country. It was never studied in the local setting despite the higher prevalence/incidence reported in other countries.

Objectives : To determine the magnitude of dating violent acts, types, consequences and risk factors of dating violence and effectiveness of an educational intervention to improve knowledge and attitudes to develop healthy dating relationships among undergraduates in selected state universities in the Western Province.

Methods: The study had three phases with different study designs. Phase I of the study was a descriptive (retrospective) study. Three state universities of the seven were selected applying simple random sampling (SRS). It was conducted among

second year undergraduates who had established heterosexual relationships of \geq six months prior to the main survey. The sample size computed was 1296 to determine the incidence of violent acts, types and consequences following dating violence. Multi-staged stratified cluster sampling method was used to select clusters. Questionnaires used were SAQ I (screening questionnaire), SAQ II (questionnaire on dating violence) and SAQ III (questionnaire on putative risk factors) as a combined self-administered questionnaire (SAQ combined) which were validated and pre tested. Incidence (related to past six months), types and consequences were described as percentages and 95% confidence intervals.

Phase II was conducted as a case control study to determine risk factors for dating violence. Cases and controls were selected applying SRS to serially numbered questionnaires from those who participated for the descriptive study (Phase I). Cases were those who experienced dating violence and controls, were those who did not experience dating violence during the past six months. The sample size calculated was 200 for each group. Data was collected using the SAQ III. Bivariate analysis was done using chi-square test. A probability level of 0.05 was considered as significant and the results were expressed as odds ratios with 95% confidence intervals. Multiple logistic regression was done using forward, stepwise selection to control for confounding. Model fit was assessed using Wald test and a p value less than 0.05 was considered as a good fit.

Phase III was a quasi-experimental study where an educational intervention was implemented to improve knowledge and attitudes to develop healthy dating relationships. Experimental and control groups were purposively selected from two different universities. The sample size calculated for each group was 65. Data was collected using a self-administered questionnaire (SAQ IV) at pre-intervention and six months post-intervention. The intervention comprised a lecture on “Dating relationships and dating violence” followed by discussions on case scenarios and a distribution of a booklet entitled “Healthy Relationships” among study participants. Control group was only given a lecture entitled “Time management, sexual and reproductive health and psychological well-being”. Effectiveness of the intervention between groups was calculated using chi-square test and within the group improvement using McNemar test.

Results : Response rate in Phase I was 95.4% (n=2219/2327) and 91% (n=262/288) in Phase III at the screening stage. Among those responded in Phase I, only 1296 (1296/2219= 58.4%) had an ongoing dating relationship of equal or more than six months duration. Overall cumulative incidence of violent acts for the last six months was 78.2% (95% CI: 75.8 – 80.4%, n=1013). The incidence of violent acts of controlling behaviours was 64.8% (95% CI: 62.2 – 67.4%, n=840), verbal abuse was 56.9% (95% CI: 54.2 – 59.7%, n=738), physical violence was 13.3% (95% CI: 11.5 – 15.2%, n=172) and sexual violence was 1.1% (95% CI: 0.6 – 1.8%, n=14) during the immediate six months prior to the survey.

Overall consequences of dating violence were sleeping problems in 7.4% (n=26/350) males and 5.7% (n=38/663) females and eating problems in 4.8% (n=17/350) males and 3.3% (n=22/663) females. Academic performances were affected in 6% (n=22/350) males and 7.5% (n=50/663) females. One percent (0.8%; n=8) have felt like committing suicide.

The two risk factors for dating violence were “fathers” violent behaviour after “consuming alcohol” (adjusted OR= 3.3; 95% CI: 1.1 – 4.1%, p=0.04) and “mothers” “education level of having \leq GCE O/L” (adjusted OR= 2.2; 95% CI: 1.3 – 3.7%, p=0.003).

There was a significant (p<0.01) improvement in good knowledge on dating violence and in favourable attitudes (p=0.001) on dating violence, gender stereotypes and gender roles, in the experimental group compared to the control group at six months post-intervention.

Conclusions and Recommendations: Incidence of acts of dating violence is considered high. It was associated with two risk factors. The educational intervention conducted proved to be effective in improving knowledge and attitudes. Recommend the application of educational intervention among the university students to reduce dating violence.

Keywords: Dating, violence, Incidence, Risk factors, Educational intervention

0016.Fernando, H.M.C.

Postpartum family planning practices and associated factors among mothers of infants attending child welfare clinics : A comparison between two urban and rural settings in Polonnaruwa district.

MSc. Community Medicine – 2019

SC 0162

Background: Use of family planning following the childbirth has benefits to both mother and the child and it has been considered as a way to reduce unmet need in family planning among women. Postpartum family planning is the use of family planning methods during the first year postpartum. Its prevalence or associated factors between urban and rural communities have not been compared in the few studies done locally.

Objective : To compare postpartum family planning practices and associated factors related to socio demography, knowledge, myths, attitudes and services received, among mothers of infants, attending Child Welfare Clinics, in two urban and rural settings in Polonnaruwa district.

Methods : A clinic based comparative cross-sectional study was conducted in two urban and rural settings in Polonnaruwa district. A sample of 198 participants were recruited for each group making a total of 396. Consecutive sampling method was used in the urban setting due to availability of lesser number of mothers whereas systematic sampling method was used in the rural setting. An interviewer administered questionnaire was used to collect data. The data was analysed using SPSS version 23.0. Chi square test was used to compare the postpartum family planning practices. Unadjusted odds ratio and 95% confidence interval were used to find the associated factors. P value less than 0.05 was considered as significant.

Results: The response rate was 100%. Of the participants, 77.8% in the urban setting and 73.2% in the rural setting were following the national recommendation of PFP. The difference observed between the two groups was not statistically significant ($p=0.293$). However, almost same percentage in the rural setting (82.3%) and in the urban setting (82.8%) were practicing a family planning method, by the time the study was conducted.

In the urban setting, younger age (OR=1.98, 95%CI:1.00-3.90) and higher level of education of mother (OR=0.45, 95%CI:0.21-0.94), having nuclear family (OR=2.37, 95%CI:0.17-4.83), with low income (OR=2.57, 95%CI:1.25-5.3) and receipt of family planning counselling at the place of delivery

(OR=3.16,95%CI:1.57,6.35) and in the rural setting, having a younger partner (OR=2.21,95%CI:1.16-4.21) and partners' higher level of education (OR=0.34, 95%CI:0.18-0.66), higher level of education of mother (OR=0.51,95%CI:0.27-0.97) and low income (OR=2.22,95%CI:1.17-4.22) were associated significantly ($p<0.05$) with the compliance to postpartum family planning whereas knowledge, attitudes, and myths on family planning were not associated significantly with postpartum family planning in both settings. The associations did not show significant differences between urban and rural settings.

Conclusion and Recommendation: Postpartum family planning was satisfactory in both settings. The compliance to it was significantly associated with several socio-demographic and health service related factors. It is recommended to focus on family planning counselling at the place of delivery.

Keywords: Postpartum family planning, Family planning, Contraception

0017. Fernando, S.

Prevalence of cardio metabolic risk related lifestyle practices, selected cardio metabolic indicators and their social and environmental correlates in an adult population aged 35-64 in the Colombo Municipal Council area.

MD Community Medicine – 2017

D 4881

Cardio metabolic risk is a construct that comprises a cluster of risk factors that are good indicators of a patients' overall risk for developing Cardio Metabolic Disease such as diabetes mellitus, cardio vascular disease (CVD), cerebro vascular disease (CVD) including myocardial infarction (MI) and stroke, respiratory disease and renal disease. Due to the complex nature of its construct and the multitude of established and postulated risk entities of CMR, ranging from hypertension, dyslipidemia, Diabetes mellitus, obesity to inflammatory markers, mediators of inflammation, hormonal imbalance and sleep pathologies, CMR exerts its influences on a plethora of disease conditions and disease indicators. The CMR related lifestyle practices broadly comprise of dietary intake, physical activity, alcohol consumption, tobacco smoking and sleep.

Present study was executed with the objective to assess the prevalence of selected CMR indicators, CMR related lifestyle practices and to describe the social and environmental correlates in an adult population aged 35 to 64 years in Colombo Municipal Council (CMC) area. Colombo Municipal Council is the most urbanized

and industrialized metropolis in Sri Lanka with an ethnically, economically culturally diverse population. The study consisted of 3 components. Component 1 consisted of adaptation and validation of the cardiometabolic Risk Reduction South Asia (CARRS) questionnaire developed by the All India Institute of Medical Sciences, India to the Sri Lankan socio cultural context. Following the translation of the questionnaire to Sinhala and Tamil languages by a panel of experts and linguists, the questionnaire was validated through a meticulous Modified Delphi Technique. Component 2 consisted implementing a cross sectional analytical study in the CMC. A sample of 1350 men and women were selected by a multi staged cluster sampling method where a Grama Niladhari Division within the CMC was considered a cluster. Forty five clusters spreading across CMC consisting 30 participants were utilized for data collection to describe the CMR related lifestyle practices for assessment of diet, physical activity, tobacco smoking, and alcohol consumption and sleep utilizing the Modified CARRS questionnaire. Estimation of the prevalence of selected CMR indicators, namely, hypertension, Diabetes mellitus, dyslipidemia was carried out by bio physical measurements and biochemical testing. The social and environmental correlates of CMR related lifestyle and CMR indicators were assessed and presented with bivariate and multivariable analysis. Component 3 consisted a Geographical Information System (GIS) mapping where geospatial clustering of CMC was carried out following a software based weighting process. Geospatial clusters were risk ranked for CMR and Grama Niladhari Divisions were named through the geospatial analysis utilizing Arc GIS software.

The estimated prevalence of CMR indicators among adults aged 35-65 years in the CMC are: hypertension 32.5% (95% CI, 29.7- 33.9), Diabetes mellitus 17% (95% CI, 14.5-19.4), dyslipidemia 49.2% (95%CI 45.7-52.8) and obesity 58.9% (95% CI, 56.1-61.6). Estimated prevalence of CMR related lifestyle practices were: consumption of suboptimal diet 52.9% 95% CI, 50.0-55.5), no or low physical activity 33.4% (95% CI 30.9-36.0), current use of alcohol 35.6 % (95% CI, 33.3- 38.6) current tobacco smoking 27.4% (95%, 25.0- 29.9) and suboptimal sleep 19.4% (95% CI 17.2-21.5).

The association of CMR related indicators with their social and environmental correlates were: for hypertension- being 50-64 years of age ($p<0.001$), being currently unemployed ($p<0.05$); for diabetes mellitus :being female ($p<0.05$), being non-Sinhala ($p<0.05$)) and being currently unemployed ($p<0.05$): for dyslipidemia: being

female ($p<0.05$) , being currently unemployed ($p<0.01$), unsatisfactory domestic wealth ($p<0.05$); for obesity- female sex ($p<0.001$) and being non Sinhala ($p<0.05$), and monthly household income less than LR20,000 ($p<0.001$).

The association of CMR related lifestyle practices with their social and environmental correlates were: for consumption of sub optimal diet: female sex ($p<0.001$), non-Sinhalese ($p<0.001$), education level of primary education or lower ($p<0.01$), household income less than SLR 20 000 ($p <0.01$) , for no or low physical activity: being aged 50-64 years ($p<0.001$) and female sex ($p<0.001$), for current users of alcohol: male sex ($p<0.001$), being Sinhalese ($p< 0.001$),being currently unemployed ($p<0.001$), level of education of primary education or lower ($p<0.001$), unsatisfactory domestic wealth ($p<0.001$), for current smoker- male sex ($p<0.001$), being Sinhala ($p<0.001$), currently unemployed ($p<0.001$),unsatisfactory domestic wealth ($p<0.001$) for suboptimal sleep unsatisfactory domestic wealth ($p<0.05$).

Multivariable analysis done to statistically model the association of CMR indicators with CMR related lifestyle practices and social and environmental correlates revealed the following association. For hypertension :male sex (AOR= 1.7; 95% CI, 1.2-2.4; $p< 0.001$), being aged 50-64 years (AOR= 1.6; 95% CI, 1.3-2.1; $p<0.001$), being current smoker (AOR= 1.7; 95% CI, 1.1-2.4; $p<0.01$); for Diabetes mellitus: being aged 50-64 years (AOR=1.8; 95%CI, 1.2-2.6; $p<0.001$); for dyslipidemia: satisfactory domestic wealth(AOR= 1.5; 95%CI, 1.1-1.9; $p<0.05$);being currently unemployed (AOR= 0.5; 95%CI, 0.4-0.8 $p<0.001$);being current smoker (AOR= 1.4; 95% CI, 95%; $p<0.001$); for obesity: female sex(AOR= 0.5; 95% CI, 0.4-0.7; $p<0.05$);being current user of alcohol (AOR= 2.0; 95%CI, 1.4-2.6; $p<0.001$); inadequate physical activity (AOR= 1.1; 95% CI, 1.1-1.7; $p<0.05$);monthly household income less than SLR 20 000 (AOR= 1.7; 95%CI, 1.3-2.3; $p<0.001$) were found to significantly associated when controlled for other factors in the respective models.

The geo spatial analysis did not reveal convergence of CMR related lifestyle, CMR indicators and their social and environmental correlates in unit direction in all geospatial clusters, it identified a risk ranking for the geo spatial clusters and real time geographic clusters for each risk domain for public health action. The clustering of CMR risk in industrialized and underserved locations were the relatively poor and populations live was observed.

The modifiable CMR related lifestyle practices need addressing and considering the

high prevalence of CMR indicators, urgent public health action is recommended beginning with the identified high-risk locations.

0018. Fernando, S.S.W

Diabetes self –care management practices and their associations among type 11 diabetes patients attending diabetes clinic in Teaching Hospital Karapitiya.

MSc. Community Medicine – 2020

SC 0154

Background: Sri Lanka has the second highest prevalence of Diabetes Mellitus (DM) in the Southeast Asia and projected to be 13.9% by 2030. Self-care management (SCM) is vital adjunctive strategy to clinical management in diabetes to prevent morbidity, disability and mortality associated with complications.

Objective: To describe the diabetes self-care management practices and factors associated with, among patients attending diabetes clinic in Teaching Hospital (TH) Karapitiya.

Methods: Cross-sectional study was conducted among systematically selected 456 patients with type 2 DM attending diabetes clinic in TH Karapitiya. SCM was assessed using culturally adopted Summary of Diabetes Self-Care Activities tool. A pre-tested interviewer administered questionnaire was used to assess the socio-demographic characteristics, and factors associated with SCM as disease characteristics, family and social support, healthcare and psychological well-being.

Results: Mean age (\pm SD) of the patients was 55.7 ± 7.6 years and 75.4% were females. Majority were rural residents, currently married, had no regular income and had secondary level education. Majority had diabetes for more than five years, two or more co-morbidities and were on oral medication. Mean score (\pm SD) for self-care management was 4.67 ± 0.85 (CI= 4.59-4.75). Scores for diet, physical activity, foot care and medication was $4.12 (\pm 1.36)$, $2.97 (\pm 1.63)$, $5.07 (\pm 1.34)$ and $6.53 (\pm 1.26)$ respectively. Twenty one (4.6%) patients had overall good SCM, while 15.6%, 30%, 55.3% and 80.9% had good physical activity, diet, foot care and medication practices. Fifty percent of patients on insulin, had not monitored blood glucose and 3.9% were Current smokers SCM was significantly associated with gender ($p=0.034$) ethnicity ($p=0.001$) place of residence ($p=0.002$) , income ($p=0.046$) ,employment ($p=0.016$) ,smoking ($p=0.030$),disease duration($p<0.001$),co-morbidities ($p=0.029$), living alone ($p=0.032$), social support ($p=0.018$), distance travelled to clinic ($p=0.042$), SCM-education ($p=0.003$) and psychological wellbeing ($p<0.001$)in univariate analysis.

Conclusions and Recommendations: Practice of SCM is poor among patients as indicated by low percentages in prevalence of good SCM. Interplay of multiple factors like culture, socio-economic disparities, psychological wellbeing and availability and accessibility of healthcare defines the level SCM in patients. Evidence shows positive effects of SCM measures in glycemic control and patient wellbeing. It is high time that current local guidelines also adopt and streamline diabetes SCM measures in to the existing DM treatment guidelines.

Keywords: Type 2 Diabetes Mellitus, Self-care management, Sri Lanka

19.Fernando, T.S.M.

Behaviour related stigma among key populations in the western province : development of a stigma tool, prevalence of human immunodeficiency virus, correlates and adopted coping strategies to overcome stigma.

MD Community Medicine – 2019

SC 0010

Introduction: Key populations (KP) who are female sex workers (FSW), men who have sex with men (MSM), drug users (DU) and transgender (TG) population face high level of self, perceived and enacted stigma due to their key behaviour. Stigma vested on these KP have made them least accessible to health care services. Their key behaviours are referred to women engaging in transactional sex, men having sex with men, the use of illicit psychoactive substances and having a gender identity which is different to their sex assigned at birth.

Objectives: The objective of this study was to develop and validate a tool to assess the behaviour related stigma (self and perceived), describe the level of stigma, determine the proportion of HIV testing uptake, estimate the prevalence of Human Immunodeficiency Virus, determine the correlates of behaviour related stigma among KP in the Western province and describe the coping strategies adopted by them to overcome stigma.

Methodology: Drug users (DU), men who have sex with men (MSM), female sex workers (FSW) and transgender (TG) were considered as KP in this study. The new tool to assess the level of behaviour related stigma among KP was developed and validated using principal component analysis and confirmatory analysis in Galle district. Confirmatory analysis was done using LISREL version 9.2. A sample size of 183 and 180 were selected for exploratory factor analysis and confirmatory factor analysis respectively.

A community based cross sectional study was conducted in the Western province in year 2018. Respondent driven sampling method was used to recruit 498 DU, 564 MSM, 508 FSW and 40 TG people. Level of behaviour related stigma and correlates of behaviour related stigma among four KP groups were assessed. HIV testing uptake was measured as the willingness to get an HIV test done at the time of the study. HIV testing was accompanied by pre and post-test counseling. Statistical analysis was done using RDS A version 7.0 and SPSS version 22.0.

Thirty-two in-depth interviews were conducted, with eight participants from each KP group to identify the coping strategies adopted by them to overcome the stigma using semi structured in-depth interviewer guide.

Results : The tool which was developed to assess behaviour related stigma among KP consisted of 17 items, was valid and reliable (Cronbach's $\alpha = 0.85$). Among the four KP groups, FSW had the highest proportion of moderate and high level of behaviour related stigma contributed by 51.6% (95% CI: 47.0 – 56.0) with moderate level and 24.2% (95% CI: 19.4 – 28.8) with high level. Drug users, MSM and TG had cumulative population proportion of moderate and high level of behaviour related stigma (71.1%, 73.1% and 70.7% respectively).

The highest proportion of HIV testing uptake was reported from FSW, which was 87.1% (95% CI: 84.4 – 89.7), followed by 50.4% in MSM (95% CI: 45.5 – 55.3), 44.8% in TG (95% CI: 24.8 – 64.3) and 38.6% in DU (95% CI: 31.2 – 46.0) respectively. The HIV prevalence among the four KP were less than one percent, with the highest reported from MSM (0.8%, 95% CI = 0.0 – 2.2), followed by 0.7% (95% CI: 0.0 – 1.9), 0.3% (95% CI: 0.0 – 0.7) and zero among DU, FSW and TG respectively.

Among the correlates of behaviour related stigma for DU, physical harassment was the only predisposing factor which was independently associated with high level of behaviour related stigma (aOR = 11.6, 95% CI: 1.4 – 93.0) with $p = 0.02$. Experience of sexual abuse in child hood by men who have sex with men (aOR = 8.03, 95% CI = 3.0 – 21.6, $p < 0.001$). Among the FSW, the experience of desertion from the family (aOR = 3.4, 95% CI = 1.3 – 9.3) and experience of harassment from the society by TG people (aOR = 17.2, 95% CI = 1.6 – 183.9). None of the socio-demographic and socio-economic factors were significantly associated with high level of behaviour related stigma among DU, FSW and TG were significant ($p > 0.05$) while advancing

age and low level of education were significant among FSW ($p<0.05$). Being open about key behavior was an active coping strategy while keeping the key behaviour as a secret was passive among the KP groups.

Conclusions and Recommendations: The Behaviour Related Stigma Scale (BRSS) was a valid and reliable tool to assess level of behaviour related stigma among KPs. There is a significant proportion of the KPs with moderate and high level of stigma and many modifiable factors are correlated with it. Actions must be taken to strengthen intervention programmes on behaviour related stigma reduction while accelerating programmes to improve awareness and sensitization of the public regarding KP. Stigma reduction will be helpful to achieve their universal access to health care.

Keywords: Key populations, Behaviour related stigma, HIV prevalence, Coping

0020.Fonseka, H.N.A.

Community healthcare service needs of the elders and effectiveness of a community healthcare package for the elders in Colombo district
MD Community Medicine- 2019 **SC 0118**

Introduction: The rapidly growing ageing population has led to much health, social and economic concerns in Sri Lanka. Complex health care needs of the elderly need be explored. In the absence of research studies with scientific evidence it would be difficult to address the health and social problems related to ageing.

Objectives: To determine the community health care service needs of the elderly and to assess the effectiveness of a community health care package for the elderly in Colombo district.

Methods : As component 1, a community based cross sectional descriptive study was carried out in Colombo district to describe health related problems and health seeking behaviour of elders, and to determine the accessibility of health and social services among the elderly in Colombo district. This study was carried out among 764 elders, selected by probability proportionate to size method, using interviewer administered questionnaire. Simultaneously in the same study sample, a cross sectional analytical study was carried out to identify the factors associated with health seeking behaviour of the elders expressed as Odds Ratios. As component 2, four focus group discussions were carried out with forty elders to describe the perception and expectations of elders on community healthcare services for the elderly and thematic data analysis was done.

Component 3 was a quasi-experimental study to assess the effectiveness of a community healthcare package aimed at improving the accessibility of healthcare services among the elderly in Colombo district.

The criteria to design the community health care package were identified from component one and two and expert opinion was used for rational reasoning to identify the two main components of the community health care package i.e. health education module and brief comprehensive geriatric assessment. The objectives of the intervention were to identify priority health issues and to promote healthy life styles among elders to take control of their health. Both intervention and control groups had 60 elders each and the outcome was assessed after two months. Effectiveness of the health education module was assessed by performing independent and paired t-tests and service utilization indicators were used to assess chronic disease in the study population was 91.2% (95% CI: 87.19-93.21). Most prevalent chronic illness was hypertension 44.2% (95% CI: 40.68-47.72), followed by diabetes 34.3% (95% CI: 31.04-37.76), heart disease 10.1% (95% CI: 7.97-12.23) and arthritis 7.6% (95% CI: 5.72-9.48). Incidence of acute illnesses was 40.3% (95% CI: 36.8-43.8). Most commonly reported acute illness was exacerbation of existing the effectiveness of geriatric assessment guide.

Results: The response rate was 96.3% (n=764). Prevalence of having at least one Conditions which was joint aches (n=268, 35.1%). Only 40.4% (n=282) attended the clinic regularly for chronic illnesses. The majority (n=594, 89%) of those having chronic illnesses visited government hospitals. Mostly visited place during acute illness was private hospitals and general practitioners (n=249, 80.8%). All the study participants were having a health care facility within 5 km distance from their residence. Majority (n=574, 75.1%) expressed their willingness to have elderly targeted health programmes at community level. Overall majority of respondents were not aware of the available social services. Those who belonged to civil status other than married (AOR=2.9; 95% CI=1.4-5.91), rural by sector of residence (AOR=9.8; 95% CI=5.7-16.6), those who cannot seek treatment by themselves (AOR=7.4; 95% CI= 3.0-18.2) and diagnosed with more than one chronic disease condition (AOR=4.7; 95% CI=1.7-12.5) were significantly associated with inappropriate health seeking behavior after adjusting for confounders.

Long waiting hours and inadequate time spent by the healthcare provider were the commonest barriers identified for access. Many were unaware of the importance of screening and disease prevention. Almost all welcomed having a healthcare worker for elderly care in the community and having a separate doctor for elderly care. Majority of the participants highlighted the need of health education programmes. Brief geriatric assessment guide was helpful in identifying health issues related to elderly and appropriate referrals were made (n=15, 25%). Thereby, it was beneficial in improving the service utilization. There was a statistically significant difference in post intervention health knowledge mean scores between the intervention group and the control group (p=0.018) with a mean difference of 6.56 (95% CI: 4.8-8.3). Health education programmes at community level are effective in improving the knowledge related to chronic conditions among elderly.

Conclusions and Recommendations: Prevalence of chronic illness among elders is alarmingly high with majority of the elders not attending clinics regularly. Community health care package was effective in improving health access and should be included in the Primary Health Care Reforms as a validated tool.

Future research are needed to be conducted on interventions for effective implementation of community based integrated care system for the elderly.

Keywords: Healthcare needs, Health seeking behavior, Community healthcare Programmes, Accessibility

0021. Gajanayake, P.H.P.

Knowledge, attitudes preventive practices of cutaneous leishmaniasis at the community level and associated factors among Public Health Inspectors in Southern province.

MSc. Community Medicine – 2019

SC 0196

Introduction : Cutaneous leishmaniasis (CL) is an emerging communicable disease in Sri Lanka. It is a notifiable disease and therefore, included in the disease surveillance system. Well-trained Public health inspectors on CL and its preventive measures are critical to ensure control of the disease.

Objectives: To describe knowledge, attitudes, preventive practices of Cutaneous leishmaniasis at the community level and factors associated among Public Health Inspectors (PHI) in Southern Province.

Methods: A descriptive cross-sectional study was carried out among 238 Public Health Inspectors in Southern Province, which reported as leishmaniasis endemic

province. Self-administrated questionnaires were filled by the participants in the presence of the investigator. SPSS version 21 was used for the data analysis. Chi-squared test with the 0.05 significant level was used to analyze factors associated with knowledge, attitudes and preventive practices of PHII.

Results: Majority of PHII were Sinhala 99.6 % (237) and Buddhist 98.3 % (234). Of them, 67.2 % (160) were well aware of the agent of the disease and 97.5 % (232) identified that the bite of infected sand flies as the mode of transmission. The majority 96.2 % (229) knew the cattle, dogs as animal reservoirs of the disease. Only 21 % (50) knew the seasonal pattern of the disease. From the respondents, 88.7 % (211) identified skin as the commonest affected site of the body. Nearly 90% were aware that the substandard houses and outdoor working as risk exposure factors of CL. Many of them 85.3 % (203) believed that the timely investigation of CL is important. However, nearly 80% perceived that they should prioritize fieldwork on dengue than CL as its increased fatality and periodic outbreaks. Nearly 75% completed field investigation of CL within 7 days and did follow up visits of diseased to ensure treatment-seeking behavior. Only 48.7 % (116) of them advised the CL patient to cover the lesion to control the transmission. Work experience in CL endemic districts, supportive supervisions, and in-service training were significantly associated ($p < 0.001$) with knowledge of the PHII. In-service training and overall preventive practice levels had a significant association ($p < 0.001$). The overall knowledge levels and attitude levels of PHII had a significant association ($P < 0.001$) with the levels of preventive practices.

Conclusions and recommendations: Even though more than half of the PHII had good knowledge and attitudes on CL, the overall levels of preventive practice were poor. Therefore, it can be further improved by in service training, supportive supervisions and distributing practical guidelines on CL.

Keywords : Cutaneous leishmaniasis, Public Health Inspectors, Southern Province

0022.Gajaweera, N.D.C.R.C.

Selected factors related to social media and Geo social networking application use on sexual behavior among male attendees of central sexually transmitted disease clinic Colombo.

MSc. Community Medicine – 2019

SC 0186

Introduction : Social media and Geo Social application use for the sexual partner seeking is found to be an increasing trend in the world. Online sexual partner seeking

is associated with higher number of risky sexual behaviors with increased risk of transmission of sexually transmitted infections including HIV. This is a developing culture and warrants in-depth studying as only a little is known about it.

Objectives: The aim of this study was to assess the usage patterns of social media and Geosocial Networking (GSN) application on sexual behavior and related factor among male Sexually Transmitted Diseases (STD) clinic attendees in Central STD Clinic, Colombo.

Methods: A cross sectional study was conducted among 402 newly registered STD clinic attendee males between 18 to 49 years of age at the central STD clinic, Colombo during 26th of August to 19th October 2019. Consecutive sampling method was used.

An interviewer administered, pre tested, validated questionnaire was used and data was analyzed using SPSS. Descriptive and inferential statistics were used where relevant. Comparisons were made using chi-square test, Fisher's exact test, independent sample test and Mann Whitney U test based on the data. Significance was considered at $p=0.05$ level.

Results; The response rate of the participants was 100 % ($N=402$). Majority of study participants ($N=261$, 64.9%) were in the age group between 25-40 years and most of them ($N=237$, 59%) were unmarried. The number who have passed A/L was 146(36.3%). The percentage of participants who have not completed O/L was 12.9% and 69(17.2%) have had tertiary education. Majority of the study participants ($N=355$, 88.3%) use internet. Out of those who use internet, majority ($N=221$, 62.3%) use social media and/or GSN apps to find friends/partners. Participants who find partners through social media showed a significantly higher median number of partners ($p<0.001$) compared to participants who don't seek partners online. GSN application users showed a similar difference ($p<0.001$). The proportion involved in group sex was significantly higher among those who seek partners through social media ($p=0.001$) and GSN applications ($p<0.001$) compared to non-online methods. A significant difference was observed, comparing the regular condom use for the partners other than marital partner, between the participants who seek and don't seek partners through social media ($p=0.045$) and who seek and don't seek partners through GSN application use ($p=0.388$). There was no significant difference between the mean age of the participants, who use and do not use social media to find partners ($p=0.165$) Similar kind of difference observed in GSN application users ($p=0.225$). Majority of the

participants (N=222, 55.2%) obtained the STI/HIV related health information through social media and GSN apps.

Conclusions and Recommendations: Possibility of social media and GSN app use in delivering health messages to people who engage in high risk sexual behaviors must be studied.

0023. Gunathilake, K.A.M.P.

Prevalence of abnormal ovarian masses, risk factors and economic burden on the state health sector attributed to epithelial ovarian cancer, in women over 40 years of age in the district, Colombo.

MD Community Medicine - 2019

SC 0008

Background: Ovarian cancer is the fourth commonest cancer among females in Sri Lanka. Despite new treatment modalities, mortality rates have remained high, and the incidence has been rising over the past two decades. There is no established screening programme for ovarian cancer at present, and often these cancers are detected late. Therefore, introducing a low-cost tool with good psychometric properties for high-risk women, while appreciating the economic burden incurred by the epithelial ovarian cancers is vital.

Objectives: To assess the prevalence of abnormal ovarian masses, risk factors and the economic burden on the state health sector attributed to epithelial ovarian cancer in women over the age of 40 years in the district of Colombo, Sri Lanka.

Methods: The study comprised of four components: Component I was a community based, descriptive cross-sectional study conducted in the district of Colombo, to assess the prevalence of abnormal ovarian masses, based on ultrasound scan findings among 931 females aged over 40 years, who were selected by probability proportionate to cluster sampling technique, with 41 clusters having 25 women in each. All the study participants underwent trans-abdominal ultra sound scanning in a field clinic conducted by a consultant Gynaecologist. Married subjects were offered a subsequent trans-vaginal scan if indicated. Abnormal ovarian mass on USS was diagnosed based on explicit criteria. In the Component II, a case control study was conducted among 91 consecutively selected newly diagnosed patients with epithelial ovarian cancer residing in Colombo district, from tertiary care hospitals, versus systematically selected 377 community controls with no abnormal ovarian masses detected at component I. A pre-tested interviewer administered risk assessment questionnaire, was introduced by three trained data collectors to assess reproductive, exogenous hormonal, and genetic

factors, alcohol and smoking habits/exposure, which was supplemented by a questionnaire on food frequency patterns and lifestyle physical activity levels that had been validated for Sri Lanka. Univariate analysis and Unconditional Multiple Logistic Regression were performed.

The component III was a case control study validate the translated Sinhala version of Goff Symptom Index (GSI) among a consecutive sample of 55 cases of ovarian cancer, irrespective of the histology type, selected from National Cancer Institute, Maharagama, and consecutive sample of 56 controls who were found free of abnormal ovarian masses during the component I. Interviews were carried out by a trained data collector prior to surgery or chemotherapy in cases and prior to ultrasound scanning in controls. Receiver Operative Curve was applied. Component IV was conducted to assess the cost incurred for the management of epithelial ovarian cancers at each stage by the state health sector at NCIM using scenario building approach.

Results: The prevalence of abnormal ovarian masses based on ultrasound assessment in females aged over 40 years in the district of Colombo was 2.9% (95% C.I: 1.8-4.0). The risk factors associated with epithelial ovarian cancer were: age >50years (AOR=2.6, 95% C.I:1.2-5.3), been educated beyond O/Ls (AOR=4.2, 95% C.I: 2.0-9.0), ever been employed (AOR=2.3, 95% C.I: 1.1-4.8), income <Rs:30,000 (AOR=1.4, 95% C.I:0.54.0), being menopausal (AOR=5.1, 95% C.I:2.4-10.8), positive family history of breast/ovary/colon cancer in a first-degree relative (AOR=10.2, 95% C.I:3.7-28.6), passive smoking (AOR=3.2, 95% C.I:1.01-10.1), exposure to abdominal X-rays (AOR=3.4, 95% C.I:1.2-9.8), sub optimal consumption of red meat (AOR=3.9, 95% C.I: 1.4-11.2), sub-optimal consumption of vegetables (AOR=2.2, 95% C.I:1.0-4.6), and sub optimal consumption of dairy products (AOR=2.0, 95% C.I:1.03-4.0). Having irregular menstrual cycles (AOR=0.4, 95% C.I:0.2-0.9), breast feeding \geq 24months (AOR=0.1, 95% C.I:0.06-0.4), using OCP for \geq 2years (AOR=0.1, 95% C.I: 0.03-0.3), history of LRT (AOR=0.2, 95% C.I:0.04-0.9) and optimal consumption of fruits (AOR=0.2, 95% C.I:0.1-0.5) were noted as statistically significant protective factors against epithelial ovarian cancer. The optimal cut-off level for the Sinhala version of modified ovarian cancer symptom index was 3 positive symptoms, indicating sensitivity of 72.7% (95% CI 60.9% -84.5%) and specificity of 76.8% (95% CI: 65.7% – 87.8%). Sensitivity of the tool to detect stage I ovarian cancer was 62.5%, whereas the sensitivity of the tool at stage IV was 85.7%. The direct costs for managing a patient

with epithelial ovarian cancer increased with the stage of the disease (Stage IA or IB; Rs. 43,632.83, Stage IC; Rs 81,931.06, stage II or III or IV Rs. 114,013.10).

Conclusions and Recommendations: Both modifiable and non-modifiable risk factors related to reproductive and genetics domains contribute to the epithelial ovarian cancers. Application of valid, reliable, low-cost tools to high-risk groups in order to detect ovarian cancers at early stages, in the primary care setting, is recommended until better biomarkers become available.

0024.Gunathilake, M.N.J.

Quality of work life and factors associated among the 60 years and above elderly working population in Gampaha district.

MD Community Medicine – 2020

SC 0201

Introduction : With the increase of elderly population, work engagement by the elders is inevitable. Hence, the Quality of Work Life (QoWL) of the elderly worker becomes an important concept which needs to be assessed and improved. In the absence of valid tools to measure QoWL, its prevalence and associated factors among the elderly workers are unknown entities in Sri Lanka. Furthermore, in improving the QoWL of the elderly worker, their perception on health and social implications of working in late life is important.

Objective : To develop and validate an instrument, Quality of Work Life Scale – for Elderly Worker (QoWLS-E), to assess QoWL among the elderly workers, determine the QoWL and the factors associated with good QoWL among elderly workers in the district of Gampaha and to explore the perception of the elderly workers on their health and social implications of working in late life.

Methods: Interviewer administered “Quality of Work Life Scale – for elderly workers” (QoWLS- E) was developed and judgmental validity was ensured. It was validated among 525 elderly workers selected through stratified cluster sampling from three selected Divisional Secretariat Divisions (DSD) in study was conducted including 835 elderly workers selected using multistage cluster sampling from Gampaha district. Prevalence of QoWL was assessed using validated QoWLS-E and associated factors through interviewer administered questionnaire. Quality of Work Life was dichotomized in to “good” and “poor” using pre-determined cut offs and factors associated with good QoWL were determined initially through Chi square test followed by binary logistic regression. “Elderly workers” perception on health and

social implication on working in old age were gathered through Focus Group Discussions (FGD).

Results: Adequately fitting nine factor model comprising physical health, psychological, facilities, safety, job content, co-worker, supervisor, flexibility and autonomy in exploratory and confirmatory factor analysis with well correlated hypothesized scaling structure confirmed the validity of QoWLS-E and a Cronbach's Alpha of 0.77 and good test – retest reliability of 0.82 confirmed reliability. Prevalence of good QoWL among the elderly workers was 32.1% (95% CI: 29.0 – 35.3). Personal factors positively associated with good QoWL were earning more than 30,000/-LKR per month (AOR= 2.1, 95%CI: 1.42 - 3.12) and having properties as an income generation method (AOR= 2.2, 95%CI: 1.16 - 4.17) while spending on own food (AOR= 0.16, 95%CI: 0.07-0.38) and having arthritis (AOR= 0.65, 95%CI: 0.43-0.98) were negatively associated with good QoWL. Of the work-related factors, engaging in a job before 60 years (AOR=1.12, 95%CI: 1.04 – 1.20) was positively associated with good QoWL, while experiencing work related accidents (AOR= 0.39, 95%CI: 0.21-0.74) and occupational engagement to support the family (AOR= 0.68, 95% CI: 0.46-0.98) were negatively associated with good QoWL.

Out of the psychosocial factors, job helping to have social interaction (AOR= 4.03, 95% CI: 1.48 – 10.95), having adequate social support (AOR=1.76, 95%CI: 1.05 – 2.96) and engaging in political activities (AOR= 2.02, 95%CI: 1.08- 3.78) were positively associated with good QoWL. Non – health influences of working in late life and health influences of working in late life were the two main themes generated from FGD's

Conclusions and Recommendations : QoWLS-E is a valid and reliable tool to determine the QoWL among the elderly workers. Prevalence of good QoWL was low among the elderly workers and was associated with multiple factors in their personal, family and work life. Elderly friendly work “ should be incorporated as a policy” to enable the elderly workers to gain the economic and social benefits of work whilst accommodating for their physical and psychosocial limitations.

Keywords : Elderly worker , Quality of Work Life , Factors associated with Quality of Work Life among elderly, Perception on working in late life

0025. Hemachandra, C.D.

Gender differences in occurrence and management of tuberculosis and the factors influencing risk and management of TB in male and female patients in the district of Colombo.

MD Community Medicine – 2019

SC 0121

Introduction: Tuberculosis (TB) is reported more often among males than females. Both biological and social factors contribute to this gender difference observed universally. However, the extent and the relative contribution of the various factors to this phenomenon had not been adequately researched in Sri Lanka.

Objective: To describe gender differences in occurrence of tuberculosis and its management and to identify the factors influencing risk and management of TB in male and female patients in the District of Colombo.

Methods: The study comprised of four components.

Component 1: A descriptive follow up study was conducted among 2169 TB patients registered in the Colombo District TB Register in 2015 to describe the difference among males and females in TB notifications, investigations and treatment outcomes. Comparisons were made using Chi square test, Independent sample t test and calculating Relative Risk (RR) with 95% Confidence Intervals (CI).

Component 2: An unmatched case-control study was conducted to identify the risk factors for acquiring TB in males and females using an interviewer administered questionnaire. Cases included 184, bacteriologically confirmed new Pulmonary Tuberculosis (PTB) patients, recruited by consecutive sampling. Community controls comprised of 368 asymptomatic individuals selected from same Grama Niladhari areas using the electoral list. Bivariate analysis followed by logistic regression was performed with and without interaction terms.

Component 3: A cohort of 296 male and 148 female bacteriologically confirmed PTB patients were followed up through clinic records for six months to identify the factors associated with treatment interruption. The baseline data of these patients were collected using an interviewer administered questionnaire to compare health seeking patterns, patient and provider delays. Cox regression was carried out to identify factors associated with treatment interruption. To supplement the findings on interruption, individual interviews were conducted.

Component 4: A qualitative study was conducted to describe stigma, discrimination and their determinants among TB patients and healthy community. The patients were selected from the chest clinics and the community members were reached in the field. The respondents were selected through purposive maximum variation sampling while individual interviews and focus group discussions were done respectively with patients and healthy community.

Results: Males had a higher notification rate (161.20/100 000) than females (79.34/100 000). More males than females had a positive (OR = 1.09, 95% CI = 1.05 – 1.13) or high grade sputum smear result (OR = 1.15, 95% CI = 1.01 – 1.31). Both males and females had similar sputum conversion rates at the end of acute phase (80.4% vs 84.1%). But more males were lost to follow up compared to females (10.7% vs 3.1%, OR = 3.44, 95% CI = 2.24 – 5.28). After adjusting for confounders, the significant risk factors of TB among both males and females were; being unmarried (AOR = 2.4, 95% CI = 1.2 – 5.0 in males and AOR = 9.7, 95% CI = 3.0 – 31.5 in females), being a non-Sinhalese (AOR = 3.9, 95% CI = 2.0 – 7.7 in males and AOR = 7.6, 95% CI = 3.2 – 18.0 in females), having an education level of grade 11 or below (AOR = 2.7, 95% CI = 1.4 – 5.0 in males and AOR = 3.2, 95% CI = 1.4 – 7.3 in females) and having Diabetes Mellitus (AOR = 7.9, 95% CI = 3.6 – 17.5 vs AOR = 23.0, 95% CI = 7.7 – 69.0). Being an ever smoker (AOR = 3.3, 95% CI = 1.8 – 6.4) and history of imprisonment (AOR = 3.3, 95% CI = 1.8 – 6.4) were significant predictors of TB in males. The predictors found among only females were; being 35 years or above (AOR = 0.2, 95% CI = 0.1 – 0.6), being employed (AOR = 2.7, 95% CI = 1.2 – 6.2), having a contact history with a relative with TB (AOR = 10.3, 95% CI = 1.9 – 55.9), having asthma (AOR = 4.5, 95% CI = 1.2 – 17.2) and use of steroid inhalers (AOR = 8.3, 95% CI = 1.0 – 68.5).

General Practitioners were the first choice of provider for symptomatic males and females. Females made more visits to care providers before they were asked to examine sputum (M = 4.5, SD = 2.7 vs M = 3.3, SD = 2.0). Both males and females had equal access to the conventional health facilities in terms of distance and travel time though travelling cost was higher for females in visiting a state facility, chest clinic or a DOT centre. More males together with their spouses had decision making power over health expenditure (51.4% vs 11.5%). More males (28.0%) than females (10.1%) had a significant patient delay.

More males interrupted treatment (AHR = 1.99, 95% CI = 1.27 – 3.12) and highest education level of grade 9 – 11 or below (AHR = 1.89, 95% CI = 1.16 – 2.98) and rarely or never being consulted in important family matters (AHR = 1.75, 95% CI = 1.10 – 2.79) were predictors among males though quantitative study failed to identify predictors for females. Narratives with individual male patients identified work related factors and substance abuse as barriers to treatment and they had stopped treatment when fitness was regained. Females had problems regard to travelling cost and needed someone to accompany them. Both were affected by side effects of drugs and body weaknesses.

Most of the TB patients had concerns over stigma and discrimination though only a third had actually experienced. Majority did not reveal the disease status. Females worried more about children and housework while males worried more about loss of work and earnings. Males experienced rejection, distancing, avoidance in the society while females had problems with marriage. Both felt separation and avoidance at health institutions. Males isolated themselves from society while females isolated themselves from family. Fear of transmission, lack of awareness, link with disreputable behaviours, physical disability and non-adherence to treatment were the determinants of stigma while fear of transmission and discrimination led to self-isolation.

Conclusions and Recommendations: Notification rates of TB higher in males compared to females while females were less likely to diagnosed with a sputum smear examination compared to males. The risk factors for TB and their effect size were different between two groups. Access to healthcare was equal in most of the time except high travelling cost for females and male dominance in decision making power over health expenditure. Patient delay and treatment interruption were significantly higher for males. About a third of the patients had experienced stigma. Interventions are suggested in the areas of increasing suspicion and using more sensitive diagnostics in females, taking measures to prevent TB or improve early diagnosis and treatment for male prisoners, involving General Practitioners effectively in case detection, prioritizing patient friendly interventions to improve compliance. Health seeking behaviour among presumptive cases need examination.

Keywords: Tuberculosis, Gender

0026.Herath, H.M.C.D.

Professional quality of life and self care among Nursing Officers working in the National Cancer Institute of Sri Lanka.

MSc. Community Medicine – 2020

SC 0164

Background : Cancer related deaths are the third commonest in-hospital deaths in Sri Lanka. Nursing officers working at the National Cancer Institute (NCI) of Sri Lanka are continuously exposed to patients' suffering and deaths which may affect the quality of their work-life. Practicing self-care has been shown to mitigate these effects, yet studies on their professional quality of life (PROQOL) and factors associated including self-care are scarce.

Objectives : Aim of this study was to determine the prevalence of components of PROQOL in terms of: Compassion Satisfaction and Compassion Fatigue which includes burnout and secondary traumatic stress (STS), and factors associated with them including the practice of self-care among nursing officers working at NCI.

Methods : A descriptive cross-sectional study was performed among nursing officers directly involved in patient care, with more than 6 month's work experience at the NCI. All eligible nursing officers (n= 445) were invited to participate, and the response rate was 95.7% (n= 426). Prevalence of compassion satisfaction, burnout and STS levels were assessed using the Professional Quality of Life Scale (Version 5). Other study instruments included a socio-demographic and work-related questionnaire, and a self-care assessment questionnaire, all of which were self-administered. Descriptive statistics, Chi-square test of significance and correlation were used in analysis of data.

Results: The nursing officers had average (52.6%, n= 224) to high (47.4%, n= 202) compassion satisfaction; and low (47.2%, n= 200) to average (52.8%, n= 224) burnout and low (36.6%, n= 155) to average (63.4%, n= 269) STS. Five domains of self-care: physical, psychological, emotional, spiritual and professional were significantly associated ($p < .05$) with compassion satisfaction and burnout, while STS was associated with psychological self-care among study sample and physical self-care among unmarried/widowed nursing officers. Having children and conflicts at the workplace were significantly associated with compassion satisfaction, burnout and STS at $p < .05$ level of significance. Compassion satisfaction and burnout were also associated ($p < .05$) with age, monthly household income and a supportive work environment. In addition, compassion satisfaction showed associations ($p < .05$) with

duration of work at NCI and nursing career while burnout was associated ($p < .05$) with the number of work-shifts per week and previous attendance to workshops on workplace stressors. Compassion satisfaction correlated negatively with burnout ($r = -0.582$, $p < .001$) and STS ($r = -0.520$, $p < .001$) while burnout and STS correlated positively with each other ($r = 0.520$, $p < .001$).

Conclusion and Recommendations: The nursing officers at NCI had average to high compassion satisfaction and low to moderate burnout and STS and there were no nursing officers with harmful levels of compassion satisfaction, burnout and STS. There is a need for interventions to further improve compassion satisfaction while reducing burnout and STS through improvement of self-care among the study population.

Keywords: Professional quality of life, Compassion satisfaction, Compassion fatigue, Burnout, Secondary traumatic stress, Self-care, Oncology nurses

0027 .Jayasekara, S.A.H.D.

Risk factors, prehospital care, health seeking patterns and functional outcomes of upper limb fractures among adolescents aged 10 to 19 years attending selected government hospitals in the Colombo district.

MD Community Medicine – 2019

SC 0017

Background: Injuries are the number one cause of morbidity and mortality among adolescents. Adolescent fractures are a neglected public health problem in Sri Lanka. Prevention of adolescent injuries is an investment for the country as adolescents belong to economically productive age group. To ease the burden on the State, attention has to be focused on prehospital care, hospital care and follow up care.

Objectives: To assess the risk factors, prehospital care, health seeking patterns and functional outcomes of upper limb fractures due to injuries among adolescents aged 10 to 19 years attending selected government hospitals in the Colombo district.

Methodology: The study consisted of four components.

Component one: A descriptive cross sectional study was conducted on a sample of 1090 newly diagnosed adolescents aged 10 to 19 years treated from an Accident Service Unit or a Primary Care unit of all secondary and tertiary care hospitals in the district of Colombo. The consecutive sampling method was used to recruit adolescent victims. The data were collected using an interviewer administered questionnaire to describe pre hospital care and data collection sheets overall pre hospital care for upper limb fractures among adolescents was assessed using a weighted scoring system.

Component two: This was conducted in two phases. Phase one: A descriptive cross-sectional study was conducted in a different setting to validate the new instrument, namely, the Functional Outcome of Adolescent Upper Limb Fractures (FOAULF). Adolescents who had completed six weeks of initial treatment were recruited from clinics or their residences to make up the required sample size of 183 for Exploratory Factor analysis. In Phase two, the validated FOAULF was administered to randomly selected cases (n=400) recruited in component one in order to assess their functional outcome after six weeks of initial treatment.

Component three: An unmatched case control study was conducted to determine the risk factors using an interviewer administered questionnaire. The cases were 450 newly diagnosed victims recruited consecutively already recruited from component one, although victims with road traffic injuries were excluded. The controls were healthy adolescents recruited from the community with a case to control ratio of 1:1 selected by a purposive sampling method.

Component four: A follow up study was conducted to determine the health seeking patterns of 400 adolescents already recruited for phase two of component two. Data collection was done by using an interviewer administered questionnaire after six weeks in the respective clinics or at participant's residences.

Results: Component one: Most of the adolescent victims were between the ages of 10 to 13 years (n=790; 72.5%) and 81.8% (n=892) of them were males.

Nearly 47% (n=518) of them were injured their residences while 26.1% were injured at schools (n= 285). Falls (n=855, 78.5%) was the main mechanism of injury. Adequate pre hospital care was received by only 24.1% (n=263) of participants. Pre hospital care was significantly associated with the patient's social class (p=0.02), the place of injury (p<0.001), the mechanism of injury (p<0.001), the type of activity carried out (p<0.001), and the anatomical site of the fracture (p=0.004).

Component two: The newly validated FOAULF emerged as a valid and reliable tool to assess the functional outcome of adolescents. The construct validity of the instrument showed a good fit with the seven factor model and reliability was satisfactory (Cronbach's Alpha coefficient 0.72). Out of 400 victims, 66.2% had good and satisfactory functional outcomes and their average score was 73.07 (SD=13.47).

Component three: Parents' employment (OR=3.1; 95%CI:1.2-7.8), having a high standard of living index (OR=3.52; 95%CI: 2.3-5.2), high social class category (social

class I & II) (OR=2.58, 95%CI: 1.7-3.92), mild to moderate physical or sports activity (OR= 1.48; 95%CI: 1.11-1.96), heavy intensity physical or sports activity (OR= 9.36; 95%CI: 3.31-26.47), watching television (OR= 1.95; 95%CI: 1.18 -3.22), playing video or computer games (OR= 2.35; 95%CI: 1.7-3.24), violence or related activities (OR=13.3; 95%CI: 4.75-37.25), and attending extra classes (OR= 1.82; 95%CI: 1.2-2.7) were the risk factors retained in the final logistic regression model in comparison with the community controls.

Component four: Nearly 70.5% of the participants sought treatment directly from the same hospital, the reasons for which were the faith and trust they had in hospital and in its staff (85.5%). Out of 400 participants, 11.5% sought indigenous medical treatment.

Conclusions and Recommendations: This study highlighted adolescent upper limb fractures due to injuries and helped to identify the gaps in service provision in pre hospital care, hospital care and followed up care. Policy makers need to make important decisions to prevent such injuries utilizing the individual and environmental risk factors uncovered. Further, the FOAULF to assess functional outcomes of adolescent victims has proven to be valid, reliable and acceptable in detecting poor functional outcomes in follow up care. Comprehensive preventive, curative and promotive care should thus be implemented.

Keywords: Adolescents, Upper limb fractures, Pre hospital care, Risk factors, Functional outcome, Health seeking

0028.Kalhari, M.A.G .

Maternal awareness , practices and associated factors on seasonal influenza for preventive measures during pregnancy among pregnant women in Medical Officers of health area Gampaha.

MSc. Community Medicine – 2019

SC166

Introduction : Influenza is a highly infectious respiratory disease, causing a considerable amount of morbidities and mortalities around the world annually. Pregnant women are at higher risk of acquiring the disease and complications. Adhering to preventive measures during pregnancy provide protection against influenza.

Objectives : To identify and describe the maternal awareness (knowledge and attitudes), practices and associated factors on seasonal influenza for preventive

measures during pregnancy among pregnant women attending antenatal clinics (ANC) in Medical Officer of Health (MOH) area Gampaha.

Methods : A descriptive cross-sectional study was conducted among 485 pregnant women, attending antenatal clinics in MOH area Gampaha. Cluster sampling method was used to recruit pregnant women. An interviewer administered questionnaire was used to gather information. SPSS version 21 was used to analyze data. Results were summarized using frequency tables, measures of central tendency and measures of dispersion. Associations between maternal awareness, practices and associated factors were analyzed using chi square test.

Results : Response rate was 100%. Majority of pregnant women (65.2%) were included in age category of 26 to 35. Most of them (96.3%) were educated up to O/Ls while 62.7% were unemployed. Majority (46.6%) were in second trimester, in first pregnancy (44.7%) and without known pregnancy complications currently (85.8%). Majority had “good” knowledge (70.7%) on seasonal influenza prevention. Majority had “good” attitudes (88.7%) and “good” practices (88%) on seasonal influenza prevention. A significant association was observed between higher age groups (> 25 years) and “good” knowledge level ($p < 0.001$), between higher educational level (above O/Ls) and “good” knowledge level ($p < 0.001$) and between employed category and “good” knowledge level ($p < 0.001$). Presence of past individual history of influenza ($p = 0.001$) and past family history of influenza ($p < 0.001$) during past one-year period were significantly associated with “good” knowledge level. A significant association was observed between higher age category (>25 years) and “good” attitudes ($p < 0.001$) and between higher education level (above O/Ls) and “good” attitudes ($p < 0.001$).

A significant association was observed between knowledge level and attitudes level where women with higher knowledge on seasonal influenza had higher percentage of “good” attitudes ($p < 0.001$) and women with higher knowledge on seasonal influenza had higher percentage of “good” practices ($p = 0.031$).

Conclusion and Recommendation: Pregnant women’s knowledge, attitude and practices towards prevention of seasonal influenza was good and need to improve further.

Keywords: Seasonal influenza, Preventive measures, Pregnant women

0029.Karunaratna, B.J.

Self-reported practice, and awareness with its associated factors on occupational hazards and safety practices among medical laboratory technologists working in Government Tertiary Care Health Institutions in Colombo district.

MSc. Community Medicine – 2020

SC 0165

Background: Medical laboratory technologists are at risk of numerous occupational hazards. Hence their awareness of occupational hazards and safety practices is of utmost importance.

Objective: To describe the self-reported occupational safety practices and to assess the level of awareness and its associated factors on occupational hazards and safety practices among medical laboratory technologists working in government tertiary care health institutions in Colombo district.

Methods: The cross-sectional study design was chosen. A census was carried out recruiting all the eligible medical laboratory technologists (n=358) currently employed during the data collection period in all the government tertiary care health institutions in Colombo district. A pretested self-administered questionnaire was used to collect data. Associates of the awareness level were determined using the odds ratio and the chi-square test placing the significance level at 0.05.

Results: Out of 358 medical laboratory technologists, 326 responded giving a response rate of 91.1%. The majority of the respondents had satisfactory level awareness of occupational hazards and safety practices (57.4%, n=187). Association between the awareness level and the socio-demographic characteristics was not statistically significant ($p>0.05$). The experience of the respondents at the current station revealed a statistically significant association with the awareness level ($p=0.047$). When only the respondents who had received any training on occupational safety were analyzed, a statistically significant association was revealed between the awareness level and the number of training sessions participated ($p=0.039$). Other occupation-related factors did not reveal significant associations with the awareness level ($p>0.05$). The majority of the participants had good laboratory safety practices. However, documentation of occupational injuries was not satisfactory. The highest proportion of respondents had perceived that heavy workload as a barrier for better practice of occupational safety.

Conclusions: The majority had satisfactory level awareness of occupational hazards and safety practices. Although the majority of the participants had reported good

laboratory safety practices, record maintenance on occupational injuries within the laboratories was seemed to be inadequate.

Recommendation: Occupational safety and health of the medical laboratory technologists should be prioritized, further strengthened and regularly monitored at the institutional level.

Keywords: Medical laboratory technologists, Awareness, Occupational hazards, Occupational safety practices

0030.Karunaratne, P.V.S.R.

Perspective of the policy makers and the community for a screening strategy for non communicable diseases : A policy analysis and a discrete choice experiment.
MD Community Medicine – 2020 SC 0199

Introduction: National health policies related to early detection and control of Non-communicable diseases had received a gradual attention and priority since early 1990s in Sri Lanka. However, there was no systematic evidence-based policy development and implementation till early 2000. With the national level political commitment, development partner interest, global commitments and evidence generation through pilot projects on NCD screening programmes, a national programme was established as “Healthy Lifestyle Centres” for screening and prevention of NCDs in 2011. The objective was to universally screen all who have no previous diagnosis of a chronic disease above the age of 40 and provide healthy lifestyle guidance. Since 2011, different implementation strategies had been deployed by the policy makers and implementors to improve screening but the uptake of screening at HLCs remained low at 10% of the target population by 2019. There was evidence on disparities in uptake levels across districts and among men and women.

Objective: To describe the policy makers perspective on the NCD screening policy evolution to derive policy learnings and to estimate people’s preference for a NCD screening service delivery model in Kalutara District, Sri Lanka.

Methods: The study consists of a policy analysis on the NCD screening policy evolution and a Discrete Choice Experiment to estimate people’s preference for a NCD screening service delivery model. Twenty-five policy actors who were involved in NCD policy making from year 2000 – 2019 were interviewed. They represented the national and regional level of Ministry of Health and key donor agencies involved with NCD screening project implementation. NCD policy development related

documents were identified and analysed along with the interview transcripts using standard policy analysis frameworks and theories. For the Discrete Choice Experiment part of the study, the choice design and the general survey questionnaire was developed through focus group discussions, literature reviews and stakeholder consultations to estimate peoples' preference for a NCD screening model. The "choice design" consisted of six attributes, which are different options for the participants to state their preference, the place of screening (with 5 options), who conducts screening (3 options), the access time for screening (4 options), time spent at screening (3 options), behaviour and attitude of staff (2 options) and cost of screening (4 options). Each participant looked at 10 "choice task pairs" and made a selection each resulting in 10 choice selections that gave them the maximum benefit. The field survey was conducted in Kalutara District by stratified random sampling of urban, rural and estate sectors. Data was collected from 187 participants from the urban sector, 253 participants from the rural sector and 152 participants from the estate sector. People's preference was assessed as utility estimates derived using conditional logistic regression. The beta-coefficients allowed to identify a priority ranking of attributes the people most valued in a health care delivery model for NCD screening.

Results: Six key policy learnings were derived from the policy analysis. Political commitment towards NCD screening and service delivery had played an important role in driving the policy process forward. Strong policy actors with a good network of influence have effectively utilized the "policy windows", thus, supported in prioritizing NCDs and establishing the HLC programme. Donor agencies and development partners such as JICA, World Bank and WHO have played a significant role in the policy process. JICA had supported in prioritizing NCD screening and generating evidence towards the screening model that contributed to the development of the national programme. The WHO set the global agenda and had provided guidelines and tools for implementation. The World Bank supported in expanding the screening and later HLCs. The early stages of the screening programme was supported by evidence, which eventually gave more prominence and visibility for NCDs. Later, the use of evidence to inform policy decisions had varied due to lack of quality evidence.

The DCE results from the three sectors (urban, rural and estate) identified different combination of characteristics for NCD screening as the most preferred option. The

urban sector attributed a high utility for attitude and behaviour of staff ($\beta = 1.75$, $P < 0.001$), less than an hour spent at screening compared to two hours or more ($\beta = 1.41$, $P < 0.001$) and cost free screening compared to having to spend Rs. 1,500 ($\beta = 1.35$, $P < 0.001$). The formally employed population ranked workplace screening as the highest preferred characteristic compared to Healthy Lifestyle Centres ($\beta = 1.75$, $P < 0.001$). The rural sector identified, behaviour of staff, time spent less than two hours with similar priorities ($\beta = 1.33$, $P < 0.001$). Cost-free screening was the next most prioritized attribute ($\beta = 1.05$, $P < 0.001$). The formally employed in this sector too ranked workplace screening as important ($\beta = 1.34$, $P < 0.001$). The estate sector attributed the highest priority for cost free screening compared to having to spend Rs. 1,500 ($\beta = 1.35$, $P < 0.001$) and even not having to spend Rs. 1,000. Different sectors preferred different access times. Saturday was preferred by the urban sector while early morning or evening access was preferred by rural and estate sectors. In the estate sector, men preferred access time of early morning but did not prefer Saturday morning access compared to women. Men were not concerned about the poor attitude of staff compared to women. People with a higher income or a higher educational level had lost more utility by experiencing rude and unfriendly behaviour of health staff in all sectors compared to the poorer and who are with a low educational level. In the urban and rural sectors, though preference variances were seen, these were not found to be significant at a p value < 0.05 . These factors were only found to affect the choice preferences significantly at a p < 0.05 in the estate sector.

Conclusions: Political support and policy networks with influential policy actors can effectively be utilized to create visibility to the much-needed policy areas. Performance indicators that are carefully identified can drive policy development and implementation. It is recommended to assess the point of view of policy beneficiaries before any policy development or implementation. Preferences of the people on service delivery aspects as desired by them may not have been the government priority. This may hinder the success of outcomes from implementing of such policies. Across all the three sectors, cost free screening with less than two hours spent on screening, where staff is warm and friendly to clients found are to be significant attributes contributing to the peoples' choices in a model screening system.

However, “One strategy fits all” service delivery options may not be effective as different sectors have identified different combination of service delivery aspects as what gives them the highest utility.

Keywords: Non-communicable disease screening, Policy analysis, Discrete choice experiment, Peoples preference

0031.Kumar, R.

Antenatal care service utilization in public and private sectors, out of pocket payments and associated factors among “low risk” pregnant women awaiting delivery at a public sector maternity centre in Colombo.

MSc. Community Medicine – 2020

SC 0013

Background and objective: The use of private healthcare is on the rise in Sri Lanka. Despite the availability of non-fee levying maternity services, pregnant women frequently combine public with private antenatal care (ANC), incurring out-of-pocket (OOP) expenditures. This study aims to describe ANC service utilization in public and private sectors, OOP payments, and associated sociodemographic and pregnancy-related factors among women with “low-risk” pregnancies awaiting delivery at the De Soysa Hospital for Women.

Methods: This was a hospital-based cross-sectional study carried out among women with “low-risk” pregnancies awaiting delivery at the De Soysa Hospital for Women. The estimated sample size was 216. Consecutive sampling was used, ensuring representation of all obstetric units. Data were collected with an interviewer-administered questionnaire designed to collect sociodemographic and pregnancy details and data relevant to ANC use and OOP spending in relation to field, hospital, and private sector ANC. Data were entered and analysed on SPSS (v21). OOP spending was estimated by tallying expenses at each antenatal visit. Frequencies and percentages were used to describe ANC use. Mean, standard deviation, median, and interquartile range were used to describe the number of antenatal visits and tests, and summarize OOP spending data. Associations between private ANC use and selected factors were measured using the Chi Square test or the Fisher’s Exact test. Median differences in OOP spending were measured using the Mann-Whitney U and Kruskal Wallis H tests. Post-hoc pairwise comparisons were made applying the Bonferroni correction.

Results: In total, 216 women participated in the study with a response rate of 94%. The rate of ever use of private sector ANC was 95%. The median number of contacts

with ANC providers was 16 (IQR 14-19); of them, 14 (IQR 11.5-16) were with medically qualified providers, and 1 (0-3) took place in the private sector. Median OOP spending was Rs. 8,160 (IQR 4,399-19,163) with spending on accessing public sector ANC (median Rs. 4560, IQR Rs. 2,655-7,420) exceeding private sector expenditures (median Rs. 1,034, IQR Rs. 0-9,657). Transport and tests contributed most to OOP spending incurred in the public sector; channeling accounted for a major share in the private sector.

Women from outside Colombo district were more likely to use private GP services ($p=0.048$), channeled consultations ($p<0.001$), private ultrasound scanning (USS) services ($p<0.001$), private laboratory services ($p=0.013$) and private pharmacies ($p<0.001$), and spend more on ANC ($p<0.001$). Participants with a higher education level, higher spousal occupational skill level, and higher monthly household income were more likely to use channeled consultations, private USS services, private laboratory services, private pharmacies, and also spend more on ANC ($p\leq 0.05$). Employed women were more likely to use channeled consultations ($p=0.007$), private USS services ($p=0.007$), and spend more on private ANC ($p<0.001$). Sinhala, Buddhist and Roman Catholic/Christian women were more likely to use private pharmacies and spend more on private ANC compared with Muslim women ($p\leq 0.05$). Primiparous women were more likely to use channeled consultations ($p=0.01$), private USS services ($p=0.009$), and spend more on private ANC ($p=0.012$), compared with multiparous women. Those with gestational diabetes mellitus were more likely to use private GP services ($p=0.015$), and spend more on public sector ANC ($p=0.001$), while women with anaemia were less likely to use private USS services ($p=0.036$) and spent less on private ANC ($p=0.024$).

Conclusion and Recommendations: Although ever use of private ANC is high among women accessing ANC at the De Soysa Hospital for Women, the bulk of service delivery takes place in the public sector. Transport and laboratory investigations were the primary contributors to OOP spending. To reduce OOP long-term; a mechanism to reimburse expenses on diagnostic services that targets economically disadvantaged women may be helpful in the short-term.

Research is needed to better understand the relatively high number of antenatal contacts among women accessing ANC at the De Soysa Hospital for Women in Colombo.

0032.Kumari, R.V.

Knowledge attitudes and practices with regard to breast , cervical and thyroid gland cancer screening and factors associated with utilization of well women clinic services among women aged 35 and 45 years in the Moratuwa Medical Officer of health area.

MSc. Community Medicine – 2019

SC 0158

Background: Breast, cervical, and thyroid cancer are the most common types of cancers seen among women in Sri Lanka. Knowledge, attitudes, and practices (KAP) of screening of these cancers are important factors in determining the utilization of the Well Woman Clinic (WWC) services in Sri Lanka especially among the target age groups of 35 and 45 years of women.

Objectives: The purpose of this study was to assess the knowledge, attitudes, and practices of the breast, cervical, and thyroid cancer screening and factors associated with utilization of the Well Women Clinic services among women aged 35 and 45 years.

Methods: A community-based descriptive cross-sectional study was conducted among 423 females of the 35 and 45 year age cohorts in the Eligible Family Register, using simple random sampling according to the proportions in the 35 (n=275, 65%) and 45 (n=148, 35%) year age cohort at the Moratuwa Medical Officer of Health area, from March 2019 to January 2020. Pre-tested, interviewer-administered questionnaires were used. Results were analyzed using a scoring system with SPSS 23. Associations were carried out using the Chi-square test with a significance level at $p=0.05$.

Results: The majority of the study population had poor knowledge of breast (35 years:68%; 45 years:81.1%), cervical (35 years:95%; 45 years:100%), and thyroid (35 years:84% and 45 years:100%) cancer screening. Although the majority of the study population had poor practice on breast (35 years:54.5%; 45 years:66.2%) and thyroid cancer screening (35 years:77.8%; 45 years:84.5%) there was good practice on cervical Pap smear screening (35 years:68%; 45 years:61.5%). The majority had poor knowledge seeking behaviour of all three cancers (35 years:68.7%; 45 years:73.6%). There was a statistically significant association between knowledge on breast cancer screening and Well Woman Clinic attendance among 35 years age cohort ($p<0.001$).

Conclusions and Recommendations: The study concluded that awareness about common cancers affecting women in Sri Lanka was poor among the study population. Therefore, it is imperative to raise awareness among women in the target age group about breast, cervical, and thyroid cancer screening and the services provided at the Well Woman Clinics.

Keywords: Breast cancer, Cervical cancer, Thyroid gland cancer, Well Woman Clinic

0033. Lasantha, W.K.D.

Prevalence of psychological distress and its associated factors among garment factory workers in Monaragala District.

MSc. Community Medicine- 2018

D 4878

Background : Psychological wellbeing is a very important factor in garment factory worker because it affect their health and productivity of the factory and country as well. This study was done to determine the prevalence of psychological distress and its associated factors among garment factory workers in Monaragala.

Methods: A descriptive cross sectional study was conducted among 306 workers in 11 garment factories. Self-administered questionnaire used to collect data of socio demographic, physical and psychological factors and GHQ 30 questionnaire was used to determine psychological distress. Probability proportionate to size sampling technique was used as the sampling technique. Simple random sampling was applied to select study participants from each subgroup. Statistical significance of the observed relationship was tested using Chi square test and p value of < 0.05 was considered as level of significance.

Results : The prevalence of psychological distress in the study population was 32.6% (95% CI: 27.4 - 38.0). The gap since marriage to first child, gap between first child to second child, working experience, having adequate sleep, satisfaction with their leisure time and self- satisfaction, supervisor support, family support, management appreciation, opportunity to upgrade their knowledge and skills were statistically significantly associated with psychological distress ($P < 0.05$).

Conclusions and Recommendations: Some socio demographic, physical and psychological factors significantly influenced on psychological distress among garment factory workers. Significant proportion of garment factory workers were suffering from psychological distress. Identifying the early signs of stress and giving attention to them can make a significant difference in the quality of life and it may lead to long life span of the individuals. Both workers as well as factory management have the responsibility to manage stress because it will help workers, management of the factory and finally productivity of the country as well. Occupational health services should be strengthened and required to plan health care services for workers who were having psychological distress.

Keywords: Prevalence, Psychological distress, Garment factory workers

0034.Liyanage, N.R.

Quality of life healthcare service provision , utilization , factors associated and underlying reasons for defaulting among adult leprosy patients in the western province.

MD Community Medicine – 2019

SC 0014

Introduction : Despite the achievement of national elimination target in Sri Lanka, leprosy continue to be a challenging issue in the Western Province which has the highest number of cases. Disabilities and disfigurement associated with leprosy affect patient's quality of life (QOL). Identification of needs and gaps of service delivery and assessment of service utilization at clinic and field level would help to redesign the existing control activities. Identifying reasons for defaulting will be important to develop and change strategies to address the gaps in service provision for defaulters.

Objectives: The study was carried out with the objective of assessing the quality of life, healthcare service provision, utilization, factors associated and underlying reasons for defaulting among adult leprosy patients in the Western Province.

Methods: Different methods were adopted for data collection in achieving the objectives of the study.

Assessment of Quality of Life: A descriptive cross-sectional study was conducted to assess the QOL of 572 adult leprosy patients attending clinics in the Western Province using locally validated Sinhala version of the WHO QOL questionnaire (WHOQOLBREF). Consecutive sampling method was applied and data was collected using an interviewer administered questionnaires (IAQ).

Assessment of service provision at hospital clinic: Stratified random sampling method was used to select 12 dermatology clinics and service provision was assessed by a pretested checklist. Preliminary checklist was developed by referring to the validated checklist by Theunuwara (2013), literature search and getting supervisor's feedback. Final checklist was developed by using Modified Delphi technique with a group of experts. Data were gathered by observations and interviewing different categories of hospital staff.

Assessment of service provision at MOH office: Stratified random sampling method was used to select 22 MOH offices and pretested checklist was used to assess the service provision. Preliminary checklist was developed by doing literature search with supervisor's feedback. Modified Delphi technique was used to develop the final checklist with group of experts. Medical Officer of Health and Supervising Public Health Inspectors in the MOH office were interviewed to gather data.

Utilization of government healthcare services: A descriptive cross sectional study was conducted to assess the utilization of government healthcare services by 672 adult leprosy patients in the Western Province. Paucibacillary patients diagnosed at least 6 months and above, and Multibacillary patients diagnosed at least 12 months and above were selected by consecutive sampling method. An IAQ was used to collect data on service utilization at both clinic and field level.

Factors associated with defaulting: A hospital based unmatched case control study was conducted among 98 cases and 294 controls to determine the factors associated with defaulting. Cases were default leprosy patients (including true defaulters and defaulters who have restarted treatment) and controls were patients on regular treatment. Defaulters were selected using the clinic leprosy register and all eligible cases were recruited for the study since the number of defaulters was limited. For one case three controls were selected by consecutive sampling method. Data collection was carried out at household and clinic level. Pretested IAQ was used to collect data.

Underlying reasons for defaulting: A qualitative study was conducted with semi structured in-depth interviews to explore the underlying reasons for defaulting among 18 defaulters and 10 patients on regular treatments. Purposive sampling method was applied and data collection was carried out at household and clinic level. Audio recordings of the interviews were later converted to written records.

Ethical Clearance was obtained from the ethical review committee, Faculty of Medicine, North Colombo Medical Faculty. Simple descriptive statistics, T test, Chi square test, bivariate analysis and Multi variate analysis were used in analysis.

Results: Overall QOL had a mean score of 3.4 (SD=0.8) with overall general health having a mean of 3.6 (SD=2.2). Mean scores of domains of WHOQOLBREF included; physical 69.8(SD=17.1), psychological 68.2(SD=16.6), social relationships 55.1(SD=25.0), environment 64(SD=18.3) by the study sample. In socio demographic factors, a higher QOL was observed in patients <60 years, male sex, passed O/L or higher, and who are currently employed with an income of Rs. 40,000 or more, and living in a permanent house. Higher QOL was observed in patients without disability and those who can perform their daily activities alone. Service provision for leprosy patients was satisfactory in all hospital categories in the Western Province. Highest total mean waiting time of 344 minutes (SD=47.2) was in the Colombo South Teaching Hospital (CSTH) and a lowest of 50 minutes (SD=11.2) in the Central Leprosy Clinic (CLC).

In 2017, Colombo district had the highest number of leprosy cases reported (157 cases). MOH areas Moratuwa (88 cases), Negombo (31 cases) and Beruwala (43 cases) had highest number of cases in the Colombo, Gampaha and Kalutara districts respectively. Seven out of 22 MOH areas had poor record keeping. In the Moratuwa MOH area 55% (48 cases) were investigated after 14 days. In the Koralawella PHI area (belonging to Moratuwa MOH area), contact tracing and health education was given only to 8 (48%) patients. Percentage of clinic utilization by adult leprosy patients in the Western province was 87.8%. There was a mean patient related delay of 16.8 months, mean health care system delay of 21.2 days and mean overall delay of 17.5 months.

Services provided by MOH office for families affected with leprosy was known by 53.8% (298) of patients. Nearly half of the sample (n=356, 53%) knew that the PHI has a role to examine family members. Majority of family contacts were examined at the hospitals (n=299, 44%), one third (n=207, 30.8%) by the PHI, 6.8% (n=46) at the MOH offices. PHIs had visited 56.7% (n=401) of the patient's houses and 54% (n=363) had received health education by PHI. Examination of all family contacts for leprosy was 82% (n=552).

Following factors were identified as risk factors for defaulting in the logistic regression (LR) analysis after adjusting for confounders; age less than 60 year (adjusted OR=3.2, v 95% CI:1.55-6.64, $P<0.05$), poor knowledge (adjusted OR=9.6, 95% CI: 4.96-18.55, $p<0.001$), normal treatment regime (adjusted OR=4.0, 95% CI:1.82-9.02, $p<0.001$), poor care giver support (adjusted OR=7.8, 95% CI:3.97-15.46, $p<0.001$).

Mean Quality of life domain scores were significantly reduced ($P<0.05$) among cases who were defaulters [physical 63.4, psychological 54.7, social relationships 41.2 and environmental 46.3] compared to controls who were non defaulters [physical 69.2, psychological 70.3, social relationships 58.8 and environmental 66.8].

Following reasons for defaulting were identified in the in depth interviews: low income, substance abuse, early disappearance of skin patches, work commitments, temporary change in the residence, physical disability, poor knowledge and attitudes, side effects of the drugs, not seeing improvement with drugs, long waiting time, unsatisfactory behavior of the health staff, poor care giver support and stigma.

Conclusions: QOL of leprosy patients was good in physical, psychological environment domains and was poor in social relationships domain. Satisfactory service provision was found in all dermatology clinics in the Western Province. Apart from CLC the mean total waiting time exceeded one hour in all other hospitals. Unsatisfactory record maintenance, delay in case investigations, reduction in providing health education and contact tracing were found in MOH areas with large number of cases. Utilization of clinic services was satisfactory. A considerable patient related delay was found. Half of the patients were aware of available field services. Majority of contact screening were conducted at hospitals. After adjusting for confounders, age less than 60 year, poor knowledge, normal treatment regime and poor care giver support were found to be risk factors for leprosy defaulting.

Recommendations: Continuous awareness programs should be conducted for health workers and community to facilitate early identification of disease, which will reduce disabilities and improve QOL of patients. Appointment system should be introduced to reduce waiting time in clinics. Duration taken to conduct case investigations, record keeping, provision of health education for leprosy patients and contact tracing at the MOH offices need to be closely monitored by the supervising officers. Patients should be well educated from the onset to continue treatment and providing a traveling

allowance for needy patients will encourage clinic attendance. Further studies should be carried out to explore the association of substance abuse and defaulting. In addition a study comparing QOL among leprosy patients and general population would give proper picture on QOL of leprosy patients.

Keywords: Leprosy, Quality of Life, Service Provision, Utilization, Defaulting

0035.Menaka, P.A.S.

Prevalence of psychological distress and its associated factors among spouses of fisherman in the fisheries district, Negambo.

MSc. Community Medicine – 2018

D 4880

Introduction : Psychological distress has been identified as a significant problem in current context of world. It has multiple consequences which will causes deterioration of quality of life such as depressive disorders, adjustment disorders, anxiety disorders etc. Fisheries community was one of major contributory work force for national gross production. Spouses of fishermen are the key role in their house holds while husband were away for their occupation. They have undergone various strenuous situations and therefor they were vulnerable to get psychological distress more

Objectives : The study was conducted to determine the prevalence of psychological distress and its associated factors among spouses of Fishermen in Fisheries District, Negombo.

Methods : Community based cross sectional study was conducted among spouses of Fishermen in Fisheries District, Negombo. Primary cluster unit was Grama Niladhari Division (GN) and it was selected by using cluster sampling method. All the Grama Niladhari Divisions were listed out according to the alphabetical order and 16 GN divisions were selected by simple random sampling method to obtained the 305 sample size. Interviewer administered questionnaire were used for data collection including Kessler psychological distress scale. Cutoff level for Kessler scale were taken as 12 to detect the psychological distress and association was analyzed by using Chi square test and Odds ratio. Level of significance was taken as .05.

Results : Response rate was 97% (N=296). Prevalence of psychological distress among spouses of fishermen was found as 32.4% (n=96,95% CI-27.1-37.3). Statistically associated sociodemographic factors with psychological distress among women were age more than 34 years, civil status of non-legally married but living together, education level of grade five or below and presence of economic difficulties.

Statistically significant associated spouse related factors were educated up to or below the grade five and illnesses of husband. Children related factors which are statistically significance were having more than two children, having single younger children (age less than 10 years), having children who were schooling and to be schooling, having children who were educated in above grade six, having unemployed children in the family and uncertainty regarding future of children. Not living with parents and experience of death of relative during year also found as statistically significant association with psychological distress the sample. Psychological distress was statistically significantly associated with women's who were having husbands faced accidents during the occupation time.

Conclusions and Recommendation : Prevalence of psychological distress among spouses of fishermen was 32% and it was higher than the prevalence among reproductive age group. There for health care providers should be expand the availability of services or diagnosis of mental illnesses as well as treatment centers at their community. Majority of statistically significant associated factors were related with the children. Major reason for this may be due to they were held children responsibilities while husbands were away. There for further studies should be done to established the temporality of association.

Keywords: Psychological distress, Prevalence, Associated factors, Spouses fishermen

0036 Mahindadasa, A.T.H.E

Prevalence and factors associated with sugar sweetened beverage consumption among grade 10 school children in government schools of education division of Panadura.

MSc. Community Medicine – 2018

D 4879

Introduction : Increase in prevalence of overweight and obesity globally during the past few decades has resulted in serious complications in adult life causing increased risk of premature illnesses and deaths. Non-communicable diseases play a major role in premature mortality and morbidity where overweight and obesity becoming a significant risk factor. The rising prevalence of obesity in children and adolescent has been linked to excess energy intake and reduce physical activity among this age group. The consumption of Sugar Sweetened Beverages (SSB) is associated with obesity, dental caries, diabetes and heart disease according to most of the studies done in

western countries. The general objective of the study was to determine the prevalence and factors associated with SSB consumption among grade 10 school children in Education Division of Panadura. To determine the Prevalence of consumption of SSB, to describe the reasons for consumption of SSB, to assess the knowledge about the health impact of SSB consumption and to describe the lifestyle factors associated with SSB consumption among grade 10 school children are the four specific objectives.

Methodology : A Cross sectional analytical study was done in the Schools having grade 10 classes in the Panadura Educational Division. School children in Grade 10 in their 15th year of age studying in government schools in Education Division of Panadura was selected as the study population to represent the group of adolescents. For the purpose of calculating the sample size the prevalence is considered as 50% allowing the maximum sample size. The sample size was calculated according to the formula described by Lwanga and Lameshow in 1991. The calculated sample size was 384. Cluster sampling method used to identify the individual sampling units. To minimize the error due to clustering the calculated sample size multiplied by the design effect (D) was taken as 1.5. The sample size was 576 and to compensate for the non-response rate of 10% another 58 was added to the sample. The final sample size was 634. Multistage stratified cluster sampling was used to select the required number of clusters. Primary sampling unit was a classroom. Cluster size was 30. Altogether 22 clusters were required to have the adequate sample size. Self-administered questionnaire was developed as the study instrument and included the variables like socio demographic information, information about the awareness of health impact of SSB consumption, lifestyle factors of the students and information as to why they use SSB. SSBs are glycemic index high liquids that contain added sugar, naturally derived caloric sweeteners, high fructose corn syrup or fruit juice concentrations. Fruit drinks, sports drinks, energy drinks, sweetened water, sweetened milk, coffee and even tea beverages are categorized under SSB. The dependent variable SSB consumption was defined as use of SSB once or more for a given day. Prevalence of SSB consumption was determined and where necessary the statistical significance was assessed using the Chi square test. Statistical significance was assessed at $p < 0.05$ level. Administrative clearance was obtained from the Ministry of Education and from the Divisional Education Director, Panadura prior to the

commencement of the study. Minimum ethical issues were identified. Informed written consent was taken from the parents or the guardian before collecting the data.

Results : The sample consisted of all grade 10 students in the age of 14 years 162 (27%) 15 years 417 (69.5%) and 16 years 21 (3.5%). There were 319 (53.2%) female students and 281 (46.8%) male students. Majority of students were Sinhalese 513 (85.5%) and were Buddhist 494 (82.3%). Although 289 (48.2%) students engage in sports in school only 178 (29.7%) were members of any sport team who regularly do sports. Almost half 287 (47.8%) of the students do not engage in sports or any type of physical activity in their schools. Almost half (n=298, 49.7%) of the students buy beverages from the school canteen during school time. More than three quarter (n=496, 82.7%) of the students buy beverages from outside the school. Out of the total sample 550 (91.7%) students usually get pocket money. The favorite drink of the total sample was carbonated drinks or soft drinks (n=212, 35.3%). 162 (27%) students liked milk and milk products while 77 (12.8%) students liked drinking water. Only 7(1.2%) students consumed carbonated soft drinks daily. Milk and milk products with added sugar were daily consumed by 16 % (n=96) students while tea, coffee, milk tea with added sugar were consumed by 75% of the students. The number of students who daily consumed any types of SSBs was 80%. Only 55.7% (n=334) students knew that “Frequent consumption of SSBs can result overweight and obesity”.

Conclusions : The study showed a high prevalence (80% daily consumption) of consumption of SSBs. Daily prevalence (1.2%) of soft drinks are much lower than sweetened milk product consumption. Therefore, the NCD burden due to consumption of sweetened milk products is relatively higher than from soft drink consumption. Knowledge on health effects of SSB were lacking among students.

Recommendations: Both health and education sectors should act in collaboration to improve the knowledge and the health status of the adolescents. The findings of the study emphasize the importance of extending the color coding and taxation to milk and milk products. State revenues collected from tax can be used to implement programmes like media campaign, provide facilities for physical activity and to provide healthier foods in schools to prevent NCDs and NCD risk factors and to reduce the NCD burden of the country.

Keywords: Sugar sweetened beverages, Non communicable disease, Adolescents

0037.Muthumala, T.N.

Post donation satisfaction, its associated factors and underlying motives among blood donors attending donor clinics of National Blood Centre, Colombo.

MSc. Community Medicine – 2019

SC 0161

Background: The demand for blood in Sri-Lanka is rising due to many public health related events. In Sri-Lanka blood collection is purely from voluntary, non-rewarded, no remunerated blood donors. As donor pool is on threat of declining, to cope up with the rising demand donor pool have to be safeguarded. To retain regular safe blood donors post blood donation satisfaction is important.

Objective: To determine the post-donation satisfaction, its associated factors and underlying motives for blood donation among blood donors attending donor clinics of National Blood Center, Colombo.

Methods: This was a cross-sectional descriptive study conducted among 423 blood donors attended outdoor donor clinics of National Blood Center, Colombo. Participants were selected by systematic sampling method. Data collection was done by a pre-tested interviewer administered questionnaire. The post-donation satisfaction was determined and the prevalence of “High” post-donation satisfaction was calculated. The post-donation satisfaction associated factors were determined using Chi square test at 0.05 significance level. Furthermore, Odds Ratios with 95% confidence interval was evaluated.

Results: The blood donors were more likely to be young, males with academic standards up to Advance Level, from religious and ethnic majorities, employed with an average low monthly income. The majority were repeated donors, more likely to be non-regular and non-loyal. The majority were unlikely to be retained. The donor clinic related particulars were adequate for majority of donors. The prevalence of “High” post-donation satisfaction was 33.3% (95% CI=29%-38%). The post-donation satisfaction was associated with donor loyalty (OR=3.4, 95% CI=2.1-5.3) at 95% significance level. Furthermore, post-donation satisfaction was also associated with adequacy of information, advertising modes and publicity for the donor clinic (OR=7.2, 95% CI=4.4-11.8), adequacy of proximity, accessibility and familiarity of locality to the public (OR=6.8, 95% CI=4.1-11.3), environment of the location and cleanliness of surrounding (OR=9.2, 95% CI=5.4-15.7), convenience of time and duration of donor clinic (OR=10.8, 95% CI=6.3-18.8), provision of refreshments following donation (OR=11.6, 95% CI=5.9-23.2) and provision of sanitary and other

facilities (OR=12.2, 95% CI=6.6-22.6) at 95% significance level. Altruism and previous donation experience were the commonest among intrinsic and extrinsic motivators respectively.

Conclusion: Blood donors with “High” post-donation satisfaction was low in proportion. A statistically significant association was found between donor loyalty and post-donation satisfaction ($p<0.001$). The associations between adequacy of each donor clinic related particular and post-donation satisfaction were also found as statistically significant ($p<0.001$).

Recommendation: Health education messages on benefits of blood donation through IEC materials to improve donor loyalty, increasing resources, conducting capacity building programmes and regularizing the available guidelines on outdoor donor clinics would be beneficial.

Keywords: Post-donation satisfaction, its associated factors, Motives, Blood donors

0038.Nadeeka, N.H.S.

Behavioral and emotional problems, their associated factors and educational intervention to reduce the behavioral problems among grade 10 students in Ampara regional director of health services area.

MD Community Medicine – 2019

SC 0021

Adolescence is a phase of life where a person is in transit and is neither an absolute child nor an adult. It is an extremely sensitive, different time in life with many physical and psychological changes taking place, sometimes at a rate the individual is unprepared for, emotionally.

This study was undertaken to identify the behavioral and emotional problems and their associated factors among grade 10 students in Ampara Regional Director of Health Services (RDHS) area, as well as to develop and evaluate an educational module to reduce their behavioral problems.

A school based Descriptive cross-sectional study was conducted from May 2018 to March 2019 among 1340 grade 10 students studying in 43 government schools in Ampara RDHS area. A multistage stratified cluster sampling was done, and cluster allocation was done according to the proportion of student population in each educational zone.

Strengths and Difficulties Questionnaire (SDQ) was used to assess the mental health status of the students. Effectiveness of life skills-based intervention to reduce behavioral problems among the students after 12 weeks.

Data analysis was done using the SPSS 21 software. Prevalence of emotional and behavioral problems were summarized as percentages. Associated factors of the mental health status were examined using Chi square test and binomial logistic regression.

The sample size was 1340 and out of them 54.6% was females and 45.4% was males. According to the Sri Lankan cut offs, 11.9% of the participants had emotional and behavioral problems. Emotional problems were the most common problem (15.1%) which was followed by conduct problems (12.9%), peer problems (12.1%) and Hyperactive/inattention problems (11.7%).

Not involving in religious activities regularly (OR 2.3 95% CI 1.3-4.3), stressful life events during the last six months (OR 1.9 95% CI 1.1-3.4), mothers low education level (OR 1.9 95% CI 1.1-3.4), not having a family member to discuss the problems (OR 2.4 95% CI 1.3-4.2), tobacco consumption by father (2.9 95% CI 1.2-6.6) and difficulties in academic activities (OR 5.9 95% CI 2.5- 13.6) were significantly associated with the abnormal total SDQ score. The life skills based educational intervention was effective reduce the behavioral problems among the school children ($\chi^2 = 4.7$, $p = 0.03$).

Conclusion: Emotional and behavioral problems are common among the grade 10 students in Ampara RDHS area and life skills-based intervention was effective to reduce the behavioral problems among the students.

Recommendations: screening programmes on mental health of the students should be incorporated to the School medical inspection programme and more life skills based activities should be conducted in schools.

Keywords: Emotional and behavioral problems, Life Skills, Intervention

0039.Naidu, W.U.

“Association of some selected reproductive health educational opportunities and family planning services received and unwanted pregnancies presented at general practices in the city of Colombo.”

MSc. Community Medicine – 2020

SC 0188

Background: Out of global pregnancies, eighty-five million, a sizeable proportion (40%), were unplanned. Many of the unplanned pregnancies become unwanted and end in abortions (50%), miscarriage (13%) and unplanned birth (38%). In Sri Lanka, 95% of the unwanted pregnancies end in abortions. Abortion is a well-known cause for maternal mortality and morbidity world over. Unsafe abortion results in the deaths of 47 000 women every year and leaves millions temporarily or permanently disabled.

Objectives: To describe and determine association of some selected reproductive health educational opportunities and family planning services obtained by women with unwanted pregnancies and women who had avoided an unwanted pregnancy presenting at general practices in the city of Colombo.

Methods : This is an unmatched case control study conducted in general practice-based study setting. Study population is women aged 18 – 49 years presenting at general practices in the city of Colombo. Total sample size was 405 which included 198 cases and 207 controls. Cases were women who have presented with unwanted pregnancies at general practices in city of Colombo. Controls were women presenting at general practices in the city of Colombo for other health problems. Subjects were selected four General practices using multistage cluster sampling. During the study period all eligible women presented with an unwanted pregnancy were recruited as cases. For each case next eligible women waiting for consultation for other problems recruited as controls. Data analysis was done by the PI using the software Statistical Package for Social Sciences (SPSS) version 21.

Results : There was statistically significant association between age category ($p=.005$), ethnicity ($p<.001$), parity ($p<.001$) and religion ($p<.001$) and unwanted pregnancy. Out of unwanted pregnancies 68.5% ($n=135$) were from the age group 25 – 39 years. It was found that women who were denied or delayed LRT following request made with a written consent were twice more likely to have an unwanted pregnancy than other women (OR infinity; 95% CI: 1.3 to infinity) and the association was statistically significant ($p=.011$).

Conclusion and Recommendations : It is recommended that policy regarding LRT should be reviewed to avoid refusal and delays. Suggest further studies related to the same topic in order to obtain more insight related to the problem.

Keywords : Unwanted pregnancy, Abortion , Family planning education , Family planning services

0040.Nathaniel, D.A.

Levels of aggression, its patterns and associated factors among the school going adolescents of grade 10, in the Negombo educational division of Gampha district.

MSc. Community Medicine – 2020

SC 0167

Background: Adolescents account for nearly one fifth of Sri Lankan population. They are in a transition period from childhood to adulthood where mental, behavioral and physical changes have huge impact.

Objective: To assess the levels, patterns and associated factors of aggression among school-going adolescents of Grade 10 in the Negombo Educational Division.

Methods: A school-based descriptive cross-sectional study was conducted among 640 Grade 10 students from schools within the Negombo Educational Division using cluster sampling method proportionate to size of the student population. Pre-tested self-administered questionnaire consisting of the globally used Buss and Perry Aggression Questionnaire (BPAQ), and a questionnaire on associated factors were used. Scoring system was developed. Cut-off score for aggression was identified using Receiver Operating Characteristic in a separate sample. Analysis was conducted using SPSS 21. Associations were identified using Chi-square test and fishers test for categorical data and independent two sample t test for quantitative data with significance level at 0.05.

Results: Majority participants were 15 years old (n=433, 67.7%), female (n=339,53.0%), Sinhalese (n=523,81.7%) and Catholic (n=353,55.2%). Mean score for aggression was 82.8(SD=14.1). Levels of high aggression with score >92 was found in 27.2%(n=175). High level of aggression was more among females compared to males (p<.001). Physical aggression was more in males (p=.002) while anger and hostility were more in females than males (p<.001). There were no significant differences by sex for verbal aggression. Other significant positive associations with high aggression level are internet use, having trouble sleeping,

often feeling lonely, consumption of alcohol in past 30 days, distant relationship with siblings, several modes of punishment of participant by parents, parental abuse towards partner, inadequate parental time spent with participant, various modes of being made fun of and being bullied, and presence of people in participant's neighborhood that may hurt them or their family ($p < .05$).

Conclusions & Recommendations: Prevalence of high aggression was 27.3% with females having higher figure than males. Poor parenting, bullying, not having quality sleep and punishments were associated with high aggression. Study recommends focusing on interventions targeting good parenting, developing life skills and teacher training on psychosocial health and counselling.

Keywords: Aggression, Adolescents, Aggression questionnaire

0041.Nawaratne, S.D

Epidemiological profile and level of psychoactive drug use, its associated factors and barriers for accessibility to treatment among people who use drugs in the western province.

MD Community Medicine – 2020

SC 0202

Introduction: Psychoactive drug use is a complex and multifaceted phenomenon causing wide range of issues imposing substantial health, social and economic burden to a country. Substance use disorders caused by psychoactive drug use are considered a neglected non communicable disease which is a salient contributor to the global burden of diseases.

Objectives: The aim of this study was to adopt and validate a tool to assess the level of psychoactive drug use, describe the epidemiological profile of drug users, and the level of psychoactive drug use among psychoactive drug users using the validated tool, assess the factors associated with psychoactive drug use and describe the barriers for accessibility to treatment among people who use drugs in the Western province.

Methodology: Drug Abuse Screening Test (DAST-10) was validated among 180 and 183 drug users in the Kandy District, using exploratory and confirmatory analysis. Criterion validity was assessed by using Psychiatrist diagnosis as the gold standard. A community based cross sectional study included 870 drug users selected by RDS sampling in the Western Province. Epidemiological profile of the participants was described. Substance use disorders among participants were assessed using the

validated DAST-SL tool and the level of problem severity was assessed using the cut off values generated during validation of the tool. Factors associated with substance use disorder were determined through multivariate analysis. Barriers for accessibility for treatment were assessed by both quantitatively and qualitatively. Qualitative assessment was conducted using in-depth interviews and key informant interviews among 21 psychoactive drug users and 10 service providers to gain an in-depth view from both perspectives on the barriers for accessing treatment services to quit drug use behavior.

Results: The DAST-SL was a valid and reliable tool to measure drug use severity among people who use drugs. Majority of drug users (68%) have started drug use before the age of 20 years. Cannabis was the commonest drug used (72.8%) and majority used inhalation method (96.7%) while 1.8% used Injecting method. Among the participants who ever had sex only 75.8% had heard of condoms. Among drug users 52.1% had ever sought treatment to quit drug use. Substance use disorder (SUD) was found on 88.4% of the participants. Among the participants 11.6% had low level, 12.2% had moderate level, 47.7% had substantial level and 28.5% had severe level of drug use problems. Among factors associated with the drug use in relation to the drug use initiation, first drug given by a friend ($p=0.04$), mother travelled abroad for work ($p=0.001$), arrested before the age of 18 years ($p=0.006$), and parental drug use ($p=0.014$) was independently significant with SUD while age of initiation of drugs and reasons for initiating drugs didn't demonstrate significant association with SUD ($p>0.05$). Current heroin use ($p=0.008$), daily drug use ($p=0.001$), poly drug use ($p=0.013$), current daily alcohol use ($p<0.001$), spend more than Rs. 40000 rupees per month on drugs ($p=0.038$), stolen goods or money to obtain drugs ($p=0.025$), and history of Tuberculosis ($p=0.003$) were also significantly associated with SUD. In relation to cession of drug use, receiving pharmacotherapy ($p=0.001$), never seeking treatment due to not trusting treatment ($p=0.004$), never seeking treatment due to fear of experiencing pain ($p=0.006$), received treatment didn't help to deal with problems effectively ($p<0.001$), and having sought treatment two or more times ($p<0.001$) were significantly associated with SUD. Reasons for seeking treatment or the place of seeking treatment didn't demonstrate significant association with SUD ($p>0.05$) while received counseling for drug use revealed a protective effect on SUD ($p=0.002$).

Lack of understanding about treatment and past experience on treatment, lack of support and negative environmental influences affect the acceptability, availability and appropriateness of treatment and behaviour of staff affect physical accessibility, while cost of treatment and expenses during treatment act as affordability barriers to treatment.

Conclusion and Recommendations: DAST-SL is a valid and reliable method to assess drug use severity at community setting. Lack of knowledge, not seeking treatment due to lack of trust and fear of pain, alcohol use and heroin use, daily drug use, multiple drug use are modifiable factors associated with SUD. DAST-SL is a cost effective method, that can be administered by any non-medical person to identify SUD early, refer for further assessment, and early intervention. Public awareness on drug use, health problems and treatment is recommended and existing treatment services should be standardized. Key barriers which undermine access to treatment among drug users must be tackled, in order to achieve the quality, and equity goals of universal health coverage.

Keywords: Psychoactive drug use, People who use drugs, DAST, Substance use disorder, Treatment access barriers Army Hospital, Colombo.

0042.Nazeer, N.

Prevalence, risk factors and psychiatric comorbidities of attention deficit hyperactivity disorder among primary school children and effectiveness of an intervention to improve knowledge and misperceptions of attention deficit hyperactivity disorder among primary school teachers, in Sinhala medium state schools in Colombo district.

MD Community Medicine - 2020

SC 0200

Introduction: Attention Deficit Hyperactivity Disorder (ADHD) is the most common, pervasive neurodevelopmental disorder plaguing children worldwide with substantial comorbidity and functional impairment. Scarce information on this complex disorder of enormous social cost at individual, family and societal level has sparked intense research interest as of late.

Objective: To determine prevalence, psychiatric comorbidities and risk factors of ADHD among primary school (PS) children and to evaluate the effectiveness of an intervention to improve knowledge and misperceptions of ADHD among PS teachers, in Sinhala medium state schools in Colombo district.

Methods: Criterion validity of SNAP-IV P/T rating scale was appraised against clinical diagnosis of a consultant child and adolescent psychiatrist (CCAP) among 400 PS children aged 6-10 years from four purposively selected schools in Kalutara in Component 1. Reliability was assessed with test-retest method and internal consistency.

Sub-component 1 of Component 2 of the study was a school based cross sectional study conducted among 1125 PS children aged 6-10 years in Colombo district to estimate the prevalence of ADHD using the validated SNAP-IV P/T – S. This was followed with subcomponent 2 which was a cross sectional study conducted to assess psychiatric comorbidities among the 73 diagnosed children with ADHD from subcomponent 1. Common comorbid conditions were clinically assessed by the CCAP.

Component 3 was a case-control study to identify risk factors for ADHD using an interviewer-administered questionnaire. From component 2 cases (with ADHD (n=73)) and controls (without ADHD (n=264)), were identified. Bivariate analysis followed by multivariate regression model identified potential risk factors.

Component 4 was a cross sectional study among 467 PS teachers from 36 Sinhala medium state schools to determine levels and cut off for knowledge and misperceptions of ADHD using KADDS instrument. Further, a cluster-randomized trial was conducted with 130 participants each in intervention and waitlist control groups, to implement and evaluate a developed intervention package to improve knowledge and misperceptions of ADHD among PS teachers.

Results: The overall sensitivity and specificity of SNAP-IV P/T – S scale as per primary care giver ratings were 93.0% (95% CI=80.9-98.5) and 83.7% (95% CI=79.5-87.4) respectively. The reliability measures were highly satisfactory (Cronbach's alpha ranged from 0.91-0.97 and Correlation coefficient ranged from 0.83-0.92 across subscales for both raters).

The overall prevalence of ADHD was 6.5% (95% CI=5.1-8.1) with ADHD-C as the commonest subtype. The prevalence in males (9.6%) was higher than in females (2.9%). Majority (65.8%, n=48) of children with ADHD had at least one psychiatric comorbidity with most occurring in those of ADHD-I subtype (p=0.008). SDDSS was the commonest comorbidity in both genders.

Multivariate analysis revealed, male sex (aOR=3.74; 95%CI=1.67-8.35), lower educational level of the mother (aOR=3.31; 95%CI=1.39-7.98), maternal psychopathology (aOR=7.28; 95%CI=1.55-34.35), prenatal exposure to passive tobacco smoke (aOR=3.76; 95%CI=1.09-12.95), Birth weight <2500g and /or gestation period of <37 completed weeks (aOR=3.6; 95%CI= 1.48-8.74), neonatal complications (a OR=4.03; 95%CI=1.94-8.32) , minimal leisure time with family (aOR=2.39; 95%CI=1.19-4.82) and subjected to teasing/ bullying (aOR=5.03; 95%CI=2.47-10.25) as significant predictors of ADHD.

Only 31% (95%CI=26.9-35.5) of PS teachers had satisfactory knowledge of ADHD. The overall knowledge score of the teachers was 33.1% and misperception scores reflecting incorrect beliefs was 21.4%.

The median total knowledge scores post intervention for intervention group and waitlist control group was (24.0, IQR=8.0) and (12.0, IQR=9.3) respectively, (p<0.001).

Conclusions and recommendations: SNAP-IV P/T – S rating scale is a valid and reliable tool to screen for ADHD among 6-10 year olds in Sri Lanka. Approximately, 1 in 15 children (6.5%) in a classroom have ADHD reflecting the magnitude of disease burden. Risk factors indicate that primary prevention should focus on strengthening neonatal, child and maternal health services in the country. A school based screening to enable early detection and timely referral is the need of the hour. A pre-service/in-service training on ADHD for teachers' for improvement of knowledge is of paramount importance.

Keywords: ADHD, Teachers' knowledge, Comorbidities, Risk factors, SNAP-IV

0043. Nilakshan, J.M.

Psychological distress and associated factors among young mothers (under 24 years) of children under 5 year in Mullaitivu district.

MSc. Community Medicine – 2020

SC 0155

Background: - Psychological distress is the number one cause of specific disability adjusted life year (DALY). There are many factors associated with the maternal psychological distress in lower and middle-income countries include socioeconomic status, living in rural areas with crowded households, lack of social support, food insecurity and adverse life events. the present study was conducted to describe the

psychological distress and associated factors among young mothers (under 24 years) of children under 5 years in Mullaitivu district.

Method: Community based descriptive cross-sectional study was carried out in Mullaitivu from August 2018 to November 2018. Young mothers who are not completed 24 years at time of interview and having one living child under 5 years was recruited. Sample size was 482 (4.93% non-responders). Psychological distress was assessed by Kessler 6 questionnaire and modified life event inventory. Selected factors, maternal physical and sexual abuse assessed by abused assessment questionnaire (AAQ) and maternal support by maternal social support scale (MSSS). Psychological distress defined as Kessler 6 score 7 and above. Chi square was applied to see the statistically significance.

Results: Prevalence of psychological distress among young mothers with under 5 children in Mullaitivu is 37.3%. Majority of mothers (84.4%) had good social support. Socio- demographic factors associated with psychological distress in young mothers with under 5 children were marital status when categorized in to married/living together and other status ($p=0.003$), Husband/Partner's education categorized in to studied grade five and above with less than grade five ($p=0.008$), household income categorized in to above and below 25,000 Rupees ($p=0.017$). Other factors associated with psychological distress were ever physical abuse ($p=0.001$), physical abuse while pregnant ($p=0.001$), current physical ($p=0.001$) and sexual abuse ($p=0.001$). Life events such, separated from partner/husband ($p= 0.0001$), husband use harsh words ($p=0.0001$), husband been unfaithful ($p=0.0001$), arguments with family member ($p= 0.0001$), involvement in big fights ($p= 0.0001$), husband become unemployed ($p=0.003$), and debt beyond means of repayment ($p=0.0001$) have significant association with psychological distress.

Conclusion: - Prevalence of psychological distress among young mothers of children under 5 years in Mullaitivu is high (37.3%). More than 90% of young mothers of under 5 children studied up to grade 10 and above. Most of the school drop out happen at grade 10 or Ordinary Level (83%). Majority of mothers (84.4%) in sample has good family support. About forty-two percentage of woman had ever physically abused and more than 15% of mothers recently got abused.

Physical or sexual abuse is significantly associated with psychological distress in young mothers of children under 5 years in Mullaitivu District.

Keywords: Psychological distress, Young mothers, Young mothers of under 5 years, Life event.

0044.Nissanka, N.A.K.A.I.

Risk factors for non –alcoholic fatty liver disease among the patients admitted to North Colombo Teaching Hospital Ragama.

MSc. Community Medicine – 2019

SC 0190

Background: The burden of the Non Alcoholic Fatty Liver Disease (NAFLD) was rising globally. It was the disease condition where there were increase fat deposition ($\geq 5\%$) in the hepatic cells. The objective of this study was to determine the risk factors for NAFLD among the patients admitted to North Colombo Teaching Hospital (NCTH) Ragama.

Methods: A case control study was conducted among the 106 cases with NAFLD and 212 unmatched hospital based controls without having NAFLD according to the ultrasonography by using convenient sampling technique. A case was defined based on the presence of fatty liver according to the diagnostic ultra sonographic criteria. Those were increase echogenicity of the liver compare to kidney and spleen, obliteration of vascular architecture and deep attenuation of ultrasonic signals. There should be at least two out of three criteria to diagnosed as NAFLD. The data was collected by using interviewer administered questionnaire. The risk factors were determined by using multiple logistic regression and the results were interpreted by using adjusted odds ratio(AOR), 95 % confident interval (95% CI) and the p value.

Results: The risk factors for NAFLD were found as the fast food consumption more than 1 time per week (AOR=9.34, 95% CI= 4.47-19.49, p value= <0.001), none consumption of coffee (AOR=2.78, 95% CI= 2.78-1.32, p value=0.007), family history of liver disease (AOR=12.2, 95% CI= 2.16-67.97, p value=0.005), methotrexate usage (AOR=32.02, 95% CI=1.45-707.29 p value=0.028), inadequate physical activity (AOR=8.10, 95% CI= 4.04-16.26, p value= <0.001), high BMI value more $\geq 23\text{Kg/m}^2$ (AOR=6.17, 95% CI=2.93-12.99, p value= <0.001) Being a Sinhalese (AOR=12.7, 95% CI=2.03-79.33, p value=0.007).

Conclusion: There were seven independent risk factors for NAFLD were identified. Among those most of the risk factors were modifiable risk factors such as inadequate

physical activity, High BMI value ($\geq 23\text{Kg/m}^2$) with overweight, infrequent coffee consumption and increase fast food consumption.

It should be taken primary preventive strategies for those modifiable risk factors to prevent NAFLD.

Keywords : NAFLD, risk factors, Ragama

0045.Perera, K.C.M.

Cervical cancer screening : suitability of new HPV/ONA screening implementation, comparison of screening results between cervical and vaginal methods of specimen collection among 35 year age cohort ever married women in Kalutara district.

MD Community Medicine - 2019

SC 0012

Abstract not available

0046.Perera, M.G.S.N.S.

Levels & associated factors of adherence to oral medication, validation of a model to predict adherence and an intervention to improve adherence among patients with type 2 diabetes mellitus attending Colombo North Teaching Hospital.

MD Community Medicine – 2019

SC 0011

Physician estimate of the patients' oral medication adherence level has a poor predictive value. A valid and reliable tool to measure oral medication adherence among type 2 diabetes mellitus (DM) which can be used in a busy clinic setting is an unaddressed need. Adherence to oral medication among type 2 DM patients is low. Hence, simple interventions to improve adherence which can be integrated into the existing health care system should be explored.

The "Model Adherence to Medicine" (MAM) questionnaire was developed with the evidence from the literature review, key informant interviews with key stakeholders of medication dispensing, and five in-depth interviews with purposively chosen DM patients. Answers were developed in a five-point Likert scale which scored from 1-5 and the possible range of the total score of the questionnaire is 15-73.

A descriptive cross-sectional study was carried out among adult patients with type 2 DM who attended clinics in District General Hospital (DGH) Gampaha from March 2016 – April 2016 to validate MAM. A sample of 150 patients was recruited consecutively to test the criterion and construct validity. The criterion was the composite index of pill count, recital dosage and the regular clinic attendance. Sensitivity and the specificity with 95% Confidence Intervals (CI) were established. Construct validity of MAM was assessed by convergent, discriminative validity and

exploratory factor analysis (EFA) Results were analyzed by Spearman correlation and Man Whitney U test with p values.

Optimal cut off point to discriminate high from average adherence to DM medication among adult patients was 70; ≤ 70 denotes average adherence while >70 high adherence. Area Under Curve (AUC) was 0.87 (95% CI 0.81 – 0.93). MAM score >70 denotes high while ≤ 70 average adherence. It has a sensitivity of 72.5% (95 % CI 58 – 83.7%) specificity of 92.9% (95% CI 85.5 – 96.9%) with a positive likelihood ratio of 10.2. EFA yielded four factors; sick role behavior, autonomy, forgetfulness and barriers. Spearman correlation between MAM score with the variables tested were moderate; pill count $r=0.39$ ($p=0.01$), recital dosage $r= 0.54$ ($p=0.001$), recall screen for doses missed $r=-0.52$ ($p<0.001$) and pills missed $r= -0.48$ ($p<0.001$). The ability of the score of the MAM to discriminate between the groups of self-reported adherence ($u= 811.5$, $p<0.01$), the presence of symptoms of hypo/hyperglycaemia ($u=3012$, $p<0.01$) and adequate long term glycaemic control was ($U=372$, $p<0.001$) satisfactory.

A clinic-based descriptive cross-sectional study was carried out to describe adherence to oral medication using the validated tool among patients with type 2 DM in Colombo North Teaching Hospital (CNTH), Ragama from July 2016 to September 2016. Multistage stratified cluster sampling was done to recruit 950 outpatient clinic attendees. Results were expressed as percentages and CI. The level of high adherence to medication among adult DM type 2 patients who attended outpatient clinics in CNTH was 35.9% (95% CI- 32.8 -39%) while male had (37.1%, 95% CI - 31.1 – 43.4) and female had (35.5%, 95% CI - 31.9 – 39.1). Clinic defaulters had high adherence level of 37.5%, 95% CI- 32.4 – 42.8).

A clinic-based unmatched case-control study was carried out among patients with type 2 DM in CNTH from July 2016 to September 2016 to determine the factors associated with adherence to medication. Multi-stage stratified cluster sampling was done to recruit 950 participants with 341 cases and 609 controls. Cases had high adherence while controls had average adherence as categorized by MAM. Five validated interviewer-administered questionnaires to measure health literacy, numeracy, beliefs, knowledge about DM and medication, basic socio-demographic and seeking alternative treatment were used in data collection. Results were expressed as Adjusted Odds Ratios (AOR) and CI. Multivariate logistic regression was performed.

There were 10 independent factors associated with high adherence to medication among adult type 2 DM patients who attended outpatient clinics in CNTH. Duration of diabetes ≥ 5 years (AOR 1.4, 95% CI 1.05-1.87), normal Body Mass Index (BMI) (AOR 1.63, 95% CI 1.21-2.2), high numeracy skills (AOR 1.59, 95% CI 1.19-2.13), never visiting an alternative treatment provider (AOR 2.83, 95% CI 1.66-4.81), obtaining medicine from private pharmacy (AOR 2.04, 95% CI 1.35-3.08), and satisfied about the time spent with the doctor during the consultation (AOR 1.85, 95% CI 1.06-3.22) were positively associated with high adherence. Perceived suffering of side effects (AOR 0.47, 95% CI 0.32 – 0.69) positive family history for DM in a sibling (AOR 0.65, 95% CI 0.43 – 0.97), feeling unfit (AOR 0.51, 95% CI 0.38 – 0.68), and blurred vision (AOR 0.73, 95% CI 0.55 – 0.98) were negatively associated with high adherence.

A cluster randomized controlled trial was carried out to determine the effectiveness of combined practitioner and patient-focused intervention to enhance adherence to medication among adult type 2 DM patients who attended outpatient clinics in CNTH from March 2017 to November 2017. The study population included patients with average adherence, as measured by MAM. Stratified simple randomization was done to select three clusters in each arm. The intervention group consisted of 91 and the control group of 85 patients who were recruited consecutively. Pre-tested practitioner and patients focused intervention package was delivered to the intervention group while the control group received usual care. Intervention package included health education (HE) to patients and practitioner sensitization about the adherence status of the patient. The primary outcome was the mean score of MAM six months after the intervention. Data were collected using validated interviewer-administered questionnaires and collectors were kept blind to the intervention status of the group. Results were expressed as mean difference and relative risks (RR) with CI. Mean difference of MAM scores six months after the intervention was 3.58 (95% CI 2.17 - 4.99, $p < 0.001$). RR of intervention group for no dose adjustment was (2.75, 95% CI 1.13–6.7), short term glycaemic control (2.01, 95% CI 1.09 – 3.69) knowledge about DM/complications (4.33, 95% CI 1.85 – 10.17). ETU admissions 0.03 (95% CI 0.01 – 0.26) and first contact care provider visits 0.14 (95% CI 0.07 – 0.28) were reduced.

Clinic- based unmatched case-control study was carried out to identify the risk factors for high adherence in CNTH from July 2016 to September 2016. Cases were

patients with high adherence while controls were average adherence. Consecutive patients were recruited until 273 sample size was reached in each group. Five validated interviewer administered questionnaires to measure health literacy, numeracy, beliefs, knowledge about DM and medication, basic socio-demographic and seeking alternative treatment were used in data collection. An additional questionnaire was used to collect data on operationalized predictors for the development of the model. Reference criterion was high adherence. The model was built using multiple logistic regression and was tested for discrimination and calibration.

There were six predictors in the model; BMI (Kg/m²), positive family history for DM, visiting an alternative treatment provider, usual place of getting medicine, symptoms and health education on DM and complications. Calibration of the model was Hosmer Lemeshow Goodness of fit test was $P=0.89$, $\chi^2= 2.93$, $df=8$. Discrimination of the model was AUC 0.67 (95 CI % 0.62 – 0.73), $p<0.001$.

The developed model with six predictors was externally validated in a clinic-based descriptive cross-sectional study in Base Hospital (BH), Kiribathgoda in February 2019. Reference criterion was the high adherence while test criterion was the developed model. A sample of 140 DM patients who were on medication for more than one year was recruited consecutively. An interviewer-administered questionnaire which included the details of re operationalized six predictors were used in data collection. The model was built using multiple logistic regression and tested for discrimination and calibration. Calibration of the model demonstrated a Hosmer Leme show Goodness of fit test $p=0.76$, χ^2 of 4.97 with $df= 8$. AUC was 0.72 (95% CI - 0.63 -0.81), $p<0.001$.

Conclusions and Recommendations: MAM was a simple, valid and reliable questionnaire with a high clinical significance in diagnosing level of adherence to oral DM medication. Approximately one-third of the clinic attendees have high adherence to DM medication which was suboptimal. Seven modifiable determinants of low adherence were identified in the present study; Body Mass Index (BMI), numeracy skills, visiting an alternative treatment provider, current herbal medicine use, obtaining medicine from a private pharmacy, receiving health education regarding DM, and time spent with the doctor during the consultation. Combined practitioner and patients focused intervention was effective in improving adherence, disease, and therapy-related outcomes. The developed model with six predictors had

good predictive performance and performed well in internal and external validation. MAM is recommended to be used in the clinical research setting. Interventions to promote factors associated with high adherence in clinic setting should be incorporated into the current busy clinic setting. Readjustment and upgrading of the developed model should be done in a wider geographical context with the inclusion of a rural population.

0047.Perera, N.A.N.

Selected aspects of quality and patient safety in management of asthmatic children and effectiveness of health education intervention for caregivers in reducing recurrent attacks in district of Gampaha.

MD Community Medicine - 2017

D 4877

Sri Lanka is identified as one of the highest prevalent countries with asthma. Also asthma is one of the common disease among admissions to the paediatric wards in the country. Yet, quality and safety of paediatric asthma management at the inward setting have not been assessed. Present study was conducted to describe the quality of care in management of asthmatic children with regard to compliance with guidelines and describing the patient safety by determining the prevalence of prescribing errors. Furthermore, caregiver knowledge and preventive practices on asthma and satisfaction regarding care provided while in the ward was studied. Also, effectiveness of a health education intervention to caregivers of inward asthmatic children with respect to improving clinical outcomes of the child and caregiver knowledge and preventive practices was assessed.

This study was carried out in the district of Gampaha in Sri Lanka in government hospitals with paediatric units during the period of September 2010 to March 2011 in three phases.

A descriptive cross-sectional design used to describe the quality of care in management of asthmatic children admitted to paediatric wards in district of Gampaha by determining the extent of compliance with guidelines and describing the patient safety by determining the prevalence of prescribing errors. Sample of 577 children diagnosed by consultant pediatricians were selected. Data collection instruments were IAQ I and three record sheets. Compliance with guidelines according to 11 indicators and prevalence of different types of prescribing errors

were expressed in percentages. Descriptive cross sectional study was carried out to describe the knowledge on risk factors of asthma, secondary prevention practices among caregivers and satisfaction of caregivers on management of the inward asthmatic children. Self-administered questionnaire were used among the 577 caregivers of children and Knowledge on asthma, preventive practices and satisfaction was categorized according to appropriate cut off values. Using bivariate and multivariate logistic regression, associated factors were identified for poor knowledge on asthma, preventive practices and satisfaction.

An experimental study was carried out with 86 and 91 caregivers of asthmatic children in intervention and control group to determine the effectiveness of a health education intervention with respect to preventing recurrent attacks and improving knowledge on caregiving. Health education booklet was prepared by PI to be used as the intervention and its validity was assessed by experts in the field. Caregivers were given a summary sheet to record child's symptoms daily and outcome was evaluated at three months and six months.

The 11 indicators with compliance to guidelines were assed in Proportions: children with assessment of acute severity of asthma - 100%, children with systemic corticosteroid therapy at first prescription - 88.9%, oral steroid therapy at first prescription - 69%, chronic asthma severity assessment - 31.19%, caregivers who got health education on triggering factors of asthma - 62.0%, caregivers who got health education on what to do during asthma attack - 37.1%, caregivers who got health education on how to use the inhaler - 68.8%, prescribed a long term use of a steroid inhaler - 54.5%, scheduled follow up appointments - 90.6%, caregivers with a diagnosis card at discharge - 100.0%, complete discharge summary on diagnosis card or clinic book - 74.4%.

Prevalence of prescribing errors for ten different prescribing errors varied from 0% to 52%. Among caregivers of asthmatic children good knowledge on asthma was observed in 64%. Caregivers been educated less than O/L and duration of prophylaxis treatment for less than one year were identified as associated factors for having poor knowledge on asthma. Among caregivers of asthmatic children good preventive practices were observed among 58.4%. Only 52.7% of the caregivers of asthmatic children were satisfied with the inward management of the child.

Health education intervention significantly decreased GP/OPD visits in intervention group compared to control group at three months and six months follow up. Also clinical outcome of the asthmatic child is improved and further caregiver Knowledge on asthma and preventive practices were improved.

Conclusions and Recommendations: It is necessary to carryout routine clinical audits in wards to assess the extent with guidelines of management of patients. Since the prevalence of some prescribing errors were very high, it is necessary to introduce a format to be followed for prescriptions. Hospital administrations need to improve sanitary and caregiver facilities in wards. Health education using a standard asthma health education booklet is necessary to be introduce among the caregivers and individual explanation and discussion with caregiver by a medical officer would improve the clinical outcomes of the child.

0048. Perera, W.N.D.

Prevalence and correlates of depression , anxiety, stress and post infectious fatigue and household costs due to illness among adults with dengue infection in Colombo district.

MD Community Medicine - 2019

SC 0122

Introduction: Dengue illness has become a universal concern today with its physical, psychological and economic burden to the countries and to the households.

Objectives: To describe the prevalence and selected correlates of depression, anxiety, stress and post infectious fatigue (PIF) and the household costs borne by an adult in a household confirmed with Dengue infection, admitted to selected healthcare institutions in Colombo District.

Methods: Component I: The Chalder Fatigue Questionnaire (CFQ) was culturally adapted, translated to Sinhala and assessed judgmentally by adopting a modified Delphi process. A validation study was conducted among Dengue infected patients admitted to Colombo South Teaching Hospital. Construct validity of CFQ-Sinhala version (CFQ(S)) was assessed with hypothesized scale structure and with confirmatory factor analysis.

Component II: A longitudinal study described the prevalence of depression, anxiety, stress and PIF following a Dengue infection. An analytical component described the correlates for depression, anxiety, stress and PIF following Dengue infection at one month follow up.

Component III: A longitudinal study was conducted to estimate the household costs due to Dengue Fever (DF) and Dengue Haemorrhagic fever (DHF) admitted to the Institute of Infectious Diseases in Colombo District.

Results: Study confirmed that culturally adapted CFQ(S) is a valid tool to screen for PIF, reproduced as per the original two factor model. Reliability with a Cronbach's alpha coefficient of 0.85 and test retest reliability coefficient of 0.89. Prevalence of depression, anxiety, stress and PIF associated symptoms was 13.1%, 23.4%, 13.8% and 81.5% respectively on discharge and at follow up was 2.7%, 3.2%, 7.9% and 35% correspondingly.

Due to low prevalence of depression and anxiety, multivariate analysis of correlates was not conducted. At multivariate analysis, being a female (AOR=3.24;95%CI=1.45-7.26), having headache post discharge (AOR=3.26;95% CI=1.39-7.61) and having myalgia post discharge (AOR=4.16;95% CI=1.74-9.92) were significant correlates of having stress following Dengue infection.

After controlling for confounders, age ≥ 35 years (AOR=4.05;95% CI=2.04-8.04), not being married (AOR=2.7;95% CI=1.38-5.28), having experience of stress full life events (AOR=1.98;95% CI=1.16-3.36), not receiving an adequate quantity of sleep (AOR=2.51;95% CI=1.00-6.31), poor quality of Sleep(AOR=15.34;95%CI=3.25-72.49),headache postdischarge(AOR=2.69;95% CI=1.6-4.53), presence of myalgia post discharge (AOR=3.63;95% CI=2.16-6.11), haemoglobin < 11 g/dl at acute stage (AOR=2.01;95% CI=1.02-3.98) and having a platelet count $\leq 30,000/\text{mm}^3$ (AOR=2.38;95% CI=1.42-3.99) have significant associations with post infectious fatigue.

The average cost per illness episode of DF household and DHF household was Rs. 23,353.90(SD=17,067.00) and Rs. 24,637.50(SD=17,248.70) respectively. The Out of Pocket Expenditure (OOPE) accounted for 98.03% and 95.59% of total household cost of DF and DHF groups correspondingly. The average household cost per illness was estimated at nearly 25% of average monthly income of a household in 2016 in Colombo District.

Conclusions and Recommendations: CFQ(S) is a valid and reliable tool to assess PIF following Dengue infection. Depression, anxiety and stress showed a low prevalence whereas PIF was present among 35% at one month post infection. The modifiable correlates suggest the indications on screening and prevention, which is

more applicable to Clinicians. High OOPE stresses on importance on prevention of Dengue infection.

Keywords: Post infectious fatigue, Psychological morbidity, Dengue infection, Correlates, Household cost

0049.Prabha, D.G.A.S.

Drug compliances knowledge regarding the disease and associated factors among chronic kidney disease patients attending to nephrology clinic at Colombo South Teaching Hospital (CSTH) .

MSc. Community Medicine – 2019

SC 0160

Introduction: Drug compliance among chronic kidney disease patients is a very important factor in patient management. Knowing the prevalence of compliance, contributing and associated factors can be used to provide a quality care and finally a better outcome for the patients.

Objective: To determine the prevalence of drug compliance, knowledge regarding the disease and associated factors among chronic kidney disease (CKD) patients attending to nephrology clinic of Colombo South Teaching Hospital, Kalubowila.

Methods: A hospital based descriptive cross-sectional study was carried out among CKD patients, belonging to all five stages, diagnosed for more than six months period, who were aged more than 18 years. Patients were given a clinic number and, a sample frame was prepared for each clinic. Consecutive patients who fulfill the inclusion criteria were recruited until the sample size achieved. Data were obtained using a pre-tested interviewer administered questionnaire. Significance level was taken as $p < 0.05$.

Results: The mean age of the study participants was 61.75 years (SD=12.64) and ranged between 22 to 89 years. Among the participants 50.6%(n=177) were male and 49.4%(n=173) were females. Among 350 participants, the prevalence of good drug compliance was 50.9 %(n=178). The knowledge regarding the disease, drugs and the indications was assessed and 42.3 %(n=148) had good knowledge according to the knowledge score. Among socioeconomic and disease related factors, having a nuclear family (OR=1.8;95%CI:1.7-2.8;p=0.012),presence of Comorbidities (OR=3.2;95%CI:1.0-10.3;p=0.034) and stage of the diseases (p=0.003) were significant with drug compliance. Having drugs side effects (OR=0.613;95%CI:0.30-9;p=0.045),complete drug regimen (OR=0.56;95%CI:0.3-0.9;p=0.045),cost per a clinic visit (OR=2.0;95%CI:1.2-3.2;p=0.002),knowing

the names of the drugs (OR=0.4;95%CI:0.2-0.9;p=0.025) were identified as management related significant factors. Knowledge on increased risk of death in CKD (OR=0.42;95%CI:0.20-0.6;p<0.001) shortness of breath (OR=2.0;95%CI:1.1-3.4;p=0.008) and nausea/vomiting (OR=1.6;95%CI:1.0-2.5;p=0.019) as symptoms showed statistically significant associations with drug compliance among CKD patients. No association was observed between number of pills per day and overall knowledge of the participants with drug compliance.

Conclusions and Recommendations: The prevalence of good drug compliance among participants was not satisfactory. Majority of the participants had poor knowledge regarding the drugs and the disease. Hence, education programs should be done targeting CKD patients and periodic assessment of drug compliance should be encouraged.

Keywords: Chronic kidney disease, Drug compliance, Knowledge

0050.Prasanga, P.T.S.

Positive mental health and associated factors among Medical Officers in Teaching Hospital Kandy.

MSc. Community Medicine – 2020

SC 0163

Background: Positive mental health is the presence of emotional, psychological and social well-being. It is a combination of feeling good about and functioning well in life. When an individual is experiencing positive emotions and functioning well, both psychologically and socially, it is called flourished level of positive mental health while feeling empty and stagnant is called languished level. Understanding the mental well-being of medical officers is important to promote their mental health in workplace.

Objective : This study was aimed to determine the level of positive mental health and associated factors among medical officers in Teaching Hospital, Kandy.

Methods : A descriptive cross-sectional study was conducted administering a pretested self-administered questionnaire consisting of short form of Mental Health Continuum (MHC-SF), among a simple random sample of 427 medical officers employed in Teaching Hospital Kandy. The level of positive mental health was assessed using categorical diagnosis as Flourished, Moderate and Languished, and the associations with socio-demographic, health related and

work related factors were investigated using chi square statistic at the $p = .05$ level of significance.

Results : Among 369 respondents (86.4%), 132 (35.8%) were flourished (95% CI 31.2% - 40.4%) and 39 (10.6%) were languished (95% CI 7.3% - 13.8%). Medical officers in advanced age, not married at that time, having their own residence and who thought the income was adequate have shown a significant association with flourished level of positive mental health. Those who were diagnosed with a mental illness were found to be more languished. The work related factors such as unit, workload, working environment and level of burnout were also significantly associated with the level of positive mental health.

Conclusion: About one third of medical officers showed languished level of positive mental health while one tenth showed a languished level. There were individual as well as workplace related factors affecting the positive mental health of medical officers.

Recommendation: Future studies should be planned to explore more the positive mental health among medical officers in different settings. Findings are recommended for health planners to use when prioritizing mental health promotion programs for medical officers.

Keywords: Positive Mental Health, Medical Officers, Flourished

0051. Priyangani, H.W.A.S

Utilization of pre conceptional care services and associated factors among newly married females in Maharagama Medical Officer of health area.
MSc. Community Medicine – 2020 SC 0157

Background : Preconceptional care (PCC) is a key component in continuum of maternal and child health. It consists of risk screening, targeted interventions and reproductive health promotion.

Objective : To assess the utilization of pre conceptional care services and associated factors among newly married females in Maharagama Medical officer of Health area.

Methods : A community based descriptive cross-sectional study was conducted among 454 females married within last one year prior to the study. Clusters were selected using population proportionate to size method and house to house survey was conducted to recruit individual participants. A pretested self-

administered questionnaire was used to collect data. SPSS version 21 was used and chi square test was performed to analyze associated factors .p value of < 0.05 considered as statistically significant.

Results : Mean age (SD) of the sample was 28 (4) years. Majority were Sinhalese (96.3 %, n= 437), Buddhists (92.3%, n=419), educated up to A/L or above (80.9%, n=367) and were employed (72.5%, n=329). There were 31.1% (n=141) who were pregnant. Majority of participants (61.9%, n=281) had a good knowledge and favorable attitudes (61.9%, n=281). The mean knowledge was 86.91% and out of seven sources, referring consultant gynecologist and obstetrician was the common source (41.2%, n=187) to obtain pre conception knowledge. Passing Advanced level (OR=4.383 (95% CI 2.665-7.206), (p=0.05), being employed (OR=2.430(95% CI 1.596-3.701),p=<0.05) and being a health professional(OR=3.815 (95% CI 1.564-9.304),p=<0.05) were significantly associated with good knowledge and pregnancy status was not associated with good knowledge(OR=0.868(95% CI 0.578-1.304),P=0.495). Utilization of pre-conceptional care services was 24.8% (n =113). Nearly 15% (14.6%, n=66) has participated to clinic for newly married couples, conducted by the Medical Officer of Health office and 10.3 % (n=47) has used other places. Private hospitals (78.8%, n=37) were the common place used to get services other than Medical Officer of Health office and Consultant gynecologist and obstetrician was the common service provider (65.9%, n=31). Services include medical examination, targeted investigations and management and health education.

Conclusions and Recommendations: Utilization of PCC services were suboptimal but knowledge and attitudes on PCC were good. Lack of awareness about the available services was the main reason for not utilizing services.

Awareness on PCC services among newly married couples should be increased and expansion of service delivery with curative and private sector need to be considered in order to increase the utilization of PCC services.

Keywords : Preconception, Utilization, Knowledge

0052.Rathnayake, R.M.T.D.

Knowledge, attitudes and practices of food hygiene and food-borne diseases among food handlers in small-scale food manufacturing establishments in Medical Officer of health area Dehiwela.

MSc. Community Medicine – 2018

D 4883

Introduction: Small-scale food manufacturing establishments have considerable contribution to economy of Sri Lanka. The opportunity to have food safety in small-scale food manufacturing establishments is key to sustaining life and promoting good health. Hence exploration of current knowledge, attitudes and practices on food hygiene and food-borne diseases is essential for future planning of health interventions. Small-scale food manufacturing establishments were defined as work settings with worker strength of 50 or less than 50, which were registered in Business Registers (having trade licenses) at the local authority (Municipal Council).

Objectives: This study was carried out to describe the knowledge, attitudes and practices, of food hygiene and food-borne diseases among food handlers in small-scale food manufacturing establishments in Medical officer of Health area Dehiwala.

Methods : A descriptive cross sectional study was carried out among total population of food handlers in small- scale food manufacturing establishments from September 2014 to January 2015. Data was collected from 301 eligible and consented food handlers by using a pretested interviewer administered questionnaire and non-participatory observational check list. Data was analyzed by using SPSS 20.0 version.

Results: The response rate was 94.06%. Mean age of the food handlers were 33.24years (SD=12.16) and the majority were in 20-29 years group. The majority of Food handles were males. Ninety six percent of food handlers had poor knowledge on food hygiene and food-borne diseases and none of them had good knowledge on these. The level of education ($p= 0.005$) and awareness received on food hygiene and food-borne diseases during the previous year ($p=0.03$) showed statistically significant associations with the knowledge on food hygiene and food-borne diseases am handlers. Favorable attitude towards usage of personal protective equipment and utensils food handlers was 71.91% and majority of them (99.35%) had a favorable attitude towards practicing personal hygienic measures

Years of experience in current food manufacturing establishment had a statistically significant association with level of practices of personal hygiene and food sanitation among food handlers (P=0.002).

Conclusion and Recommendations: The majority of the food handlers in small-scale food establishments had poor knowledge of hygiene and food-borne diseases. Almost all the food handlers had favorable attitudes practicing personal hygienic measures. Food handlers working in around 78% of small-scale food manufacturing establishments had poor practices on food hygiene and food-borne diseases.

Keywords : Food handler, Food hygiene, Food-borne diseases, Small-scale, Food manufacturing establishment

0053.Sivashankar, J.T.

Behavior problems among grade eight (early adolescent) school children in the Jaffna district, Sri Lanka : prevalence correlates and the effectiveness of a Yoga based intervention package.

MD Community Medicine – 2019

SC 0006

Background: Though adolescent age group is said to be the happiest and the healthiest in human life cycle, behavioural problems of adolescents is a major issue globally. The post conflict situation in Jaffna fueled the existing problems to be worsened by internet, smart phones etc. which are misused by adolescents who were not prepared to handle it. Parents and teachers alike did not know how to handle them properly or to guide them out of unhealthy behaviours for a better quality of life as adults.

Objective: To determine the prevalence, correlates of behaviour problems of Grade 8 (early adolescent) school children, and to evaluate the effectiveness of a yoga-based intervention package in the schools to address these behavioural problems.

Methods: Parents and teacher report of strength and difficulty questionnaire was validated for Jaffna students and cut off points determined to differentiate behaviourally normal and abnormal children using psychiatric clinic and community samples (abnormal children n=40, normal children n= 88). A cross sectional study was carried out to determine the prevalence of abnormal behaviour and its correlates using multi stage cluster sampling population proportionate to size in Jaffna district (n= 1328). A desk review conducted with

relevant expertise to finalize the yoga based intervention package. A non-randomized control trial carried out in 4 educational zones of Jaffna district for 6 months using a yoga based intervention package with a pre and post quantitative assessment and a post qualitative assessment from the intervention group.

Results: Validation of the Strength and difficulty questionnaire (SDQ) revealed that the internal consistency for emotional problem in parent tool (SDQ-P/T) was good (Cronbach's alpha= 0.7) and for all subscales in teachers tool (SDQ-P/T) were closer to 0.7. The agreement in test-retest reliability was highly significant ($p < 0.001$). Behaviourally abnormal students assessed by parents, teachers and students were 10.1% (C. I= 8.5- 11.8), 32.1% (C.I= 29.6- 43.6) and 26.5% (C.I= 24.2- 28.9) respectively by Jaffna cut off points. Female sex, age 14 years/ above, studying in type1C/ type11 schools, having an uneducated mother and unfavorable learning environment in schools were significantly associated with abnormal behaviour (female sex: adjusted OR=1.5, 95% C. I=1.1- 1.9; age>14 years: adjusted OR= 2.2, 95%, C. I=1.0- 5.0; type 11 school: adjusted OR=3.8, 95% C. I= 2.9- 4.9; uneducated mother: adjusted OR= 0.8, 95% C. I= 0.6- 1.2; unfavorable school environment: adjusted OR= 4.2, 95% C.I= 1.6- 10.8). Desk review with a panel of experts finalized Surya-namaskaram, breathing control techniques and mindfulness meditation as the intervention package for the school students. Total difficulty score and all the subscale scores between pre and post assessment, reduced significantly in intervention group and worsened in the control group ($p < 0.001$ for both groups). Focus group discussion indicated the benefits of this intervention in emotional wellbeing and educational achievements.

Conclusion and Recommendation: This yoga based intervention package was simple and the effectiveness now proved scientifically therefore can be introduced in all the schools in Sri Lanka for the better quality of life (physical, mental and educational aspects) of the adolescents.

Keywords: Adolescent behavioural problems, Strength and difficulty questionnaire, Total difficulty scores, Factors influencing behaviour problems, Yoga based intervention package.

0054.Vijewardene, K.D.S.C.

Undernutrition, dietary pattern, associated factors and effectiveness of a nutrition education intervention in improving undernutrition among elderly in Colombo district.

MD Community Medicine – 2019

SC 0016

Introduction: Under nutrition is a global and local challenge as a major contributor to morbidity and mortality among the elderly. Health and economic burden due to under nutrition are public health concerns. Dietary pattern plays an important role as a modifiable factor associated with under nutrition among the elderly. The cut-off age for the elderly was taken as 60 years.

Objectives: To describe the status of under nutrition, dietary pattern, associated factors and to evaluate the effectiveness of a nutrition education intervention in improving dietary pattern among the elderly in Colombo District.

Methods: A descriptive cross sectional study was conducted among 800 elderly aged 60 years or above in Colombo District, recruited through multistage cluster sampling, using probability proportionate to size technique to select 40 clusters. A pre-tested interviewer administered questionnaire, 24-hour dietary recall, anthropometric measurements and body composition measurements were used to collect data. Under nutrition of the elderly was assessed using both anthropometric measurements and body composition measurements. Dietary pattern was assessed using three dietary indicators namely, Dietary Diversity Score, Food Variety Score and Dietary Serving Score. Defined composite criteria was used to categorize elderly as having under nutrition or inadequate dietary pattern.

The community based nutritional education intervention was designed as three learning modules to fulfill three objectives and the activities were planned under these objectives. The intervention was delivered as two sessions through locally available resource persons.

A quasi-experimental study was conducted among 120 elders, 60 each in two Divisional Secretariat divisions in Colombo District who were identified as undernourished from the descriptive study, to assess the effectiveness of the intervention. The primary outcome was the improvement of the dietary diversity score. Evaluation of the intervention was done as process evaluation and outcome evaluation. The outcome evaluation was conducted two weeks after the

implementation of the intervention to assess the effectiveness and after three months, to assess the sustainability of the intervention.

Data analysis was conducted using SPSS version 22. The factors with significant association with under nutrition/ dietary pattern were identified by the chi-square test and the probability level of 0.05 was taken as the significant level. Bivariate analysis followed by logistic regression was conducted to find significantly associated factors of under nutrition and dietary pattern after adjusting for confounders. The mean values of Dietary Diversity Score, Food Variety Score and Dietary Serving Score, between the intervention and control group were compared, two weeks and three months after the implementation of the intervention, using the independent sample test.

Results : Among the sample of the elderly studied, 35.3% (n=282; 95% CI: 31.8%-38.7%) were undernourished.

After adjusting for confounders, the factors significantly associated with under nutrition among the elderly were, female sex (aOR=8.6; 95% CI=5.2 – 14.09), not having a monthly income (aOR=1.51; 95% CI=1.06-2.14) and little or no responsibility on food shopping (aOR=1.89; 95% CI=1.3-2.73).

The mean and standard deviation of the Dietary Diversity Score, Food variety score and Dietary Serving Score of the study sample were, 4.05 (SD= 0.93), 6.67 (SD= 1.77) and 9.5 (SD=2.36) respectively.

Of the sample of the elderly studied, 47.9 % (n=383; 95% CI= 44.6%-51.8%) were having inadequate dietary pattern.

After adjusting for confounders, the factors significantly associated with inadequate dietary pattern among elderly were, Christian, Muslim or Hindu in religion (aOR=1.92; 95% CI: 1.14-3.22), rural living environment (aOR=1.41; 95% CI:1.03-1.95), having asthma/COPD (aOR=2.39; 95% CI: 1.16-4.94), not getting nutritional advises from the hospital (aOR=1.64; 95% CI: 1.18-2.28), not getting nutritional advises from the GP (aOR=1.82; 95% CI: 1.12-2.96) and not having a home garden (aOR=1.41; 95% CI: 1.02-1.96).

In the quasi-experimental study, it was found that the intervention and control groups were comparable at baseline based on selected socio-demographic criteria and dietary indicators of the study units.

At the assessment of effectiveness of the intervention after two weeks of the implementation, the difference in dietary diversity scores between the intervention

and control group was statistically significant ($p=0.002$). At the assessment of sustainability of the intervention after three months of the implementation, the difference in dietary scores between the intervention and control group were statistically not significant ($p>0.05$).

Conclusions and Recommendations: As the burden of under nutrition and inadequacy of the dietary pattern among the elderly is considerable, relevant stakeholders and the general public should be made aware the consequences of this in order to formulate preventive strategies. It is necessary to implement screening programmes to detect under nutrition and nutrition education programmes for the elderly at community level. It is recommending to have a composite criterion to measure under nutrition among elderly especially in community setting as there is no accepted criterion at the moment.

Keywords: Under nutrition, Dietary Pattern, Dietary Diversity Score, Food variety score, Dietary Serving Score, Nutrition education intervention

0055 Vithanage, P.E.

(Eranga, V.P.)

Driving behavior and road traffic crashes among three wheeler drivers registered in police area of Thalangama, Sri Lanka.

MSc. Community Medicine – 2018

D 4882

Introduction : Road traffic crashes (RTCs) are a growing public health issue, which demands prompt preventive and control measures. Three wheelers are a major contributor to the vehicle fleet of the country problem of RTCs.

Objectives: To describe the socio demographic characteristics, occupational history as a public transport driver, history of road traffic crashes and driving behavior of three wheeler drivers registered in the police area of Thalangama, Sri Lanka.

Methodology: A descriptive cross sectional study was carried out in the police area of Thalangama. Study population was 488 wheeler drivers based in 42 three wheeler stations who registered in the police Thalangama in 2015 as public transport drivers. A total of 356 eligible three wheeler (TW) drivers were studied using a pre- tested self-administered questionnaire.

Results: The mean age of the three wheeler drivers was 40 ($SD \pm 12$) years. Twenty seven percent ($n=$ studied up to grades 6 to 10 and 54.2% ($n=193$) have sat for the G.C.E. (O/L) Examination. Their median monthly income was

Rs.38000 (IQR 30000-45000). 55.5 % (n= 162) of the drivers had not learn by a registered driving school. Driving under the influence of alcohol was significantly higher among younger age category ($p=0.019$) compared to advanced age. There were 81 (22.8%) road traffic crashes (RTCs) involving TW drivers during the period of three months prior to the research. 21.2% (n=21) were under the influence of alcohol, 27.2% (n=27) had excessive speed and 11.1% (n=11) were smoking at the time of RTC. The occurrence of RTCs was significantly higher among the drivers who drive rented TWs ($p=0.000$), who are unmarried ($p=0.029$) and who have the habit of driving after having alcohol ($p=0.041$) compared to drivers who drive their own TWs, who are married and who never drink while driving respectively.

Conclusions : RTCs are more common among drivers who drive rented TWs, who are unmarried and who habit of drinking and driving while driving.

Recommendation : It is recommended to streamline the driver training and the process of obtaining the driving increase the surveillance activities on drinking alcohol and driving and using mobile phone driving, implement legal age limit for the drivers of the TWs who provide public transport and conduct health promotion programme to reduce the prevalence of alcohol.

Keywords: Three Wheeler, Road traffic crash, Driver, Driving behavior

0056.Weerathunga, W.A.T.T.

Polypharmacy ,medication adherence and associated factors among elderly patients attending general medical clinics in National Hospital of Sri Lanka.
MSc. Community Medicine – 2020 **SC 0133**

Introduction: With the observed increase in elderly living with multi-morbidity, global trends of polypharmacy is on the rise. Medication non-adherence is considered a common consequence of polypharmacy, especially among the elderly.

Objective: To describe polypharmacy, medication adherence and associated factors among elderly patients attending general medical clinics in the National Hospital of Sri Lanka (NHSL).

Methods: A descriptive cross-sectional study was conducted among elderly patients attending general medical clinics of NHSL, in August 2019. A pretested, interviewer administered questionnaire was given to 426 participants selected by

systematic sampling. Polypharmacy was defined as the daily use of five or more medications. Medication adherence was measured by an adapted Medication Adherence Questionnaire. Descriptive statistics, Chi-square test, and multivariate logistic regression controlled for multiple confounders were used in the analysis.

Results: The majority of the study sample was female (54%), married (77.7%) and aged between 65-70 years (61.5%) with 29.6% of them currently occupied. Polypharmacy was 81.75%, while 24.2% of the participants had extreme polypharmacy. The mean number of medications used by a patient was 8.41 (SD=3.17, median=8). Odds of polypharmacy were high with multimorbidity (OR=6.57, 95%CI 3.79-11.38), including ischemic heart disease (OR=4.25, 95%CI 2.45-7.39), diabetes mellitus (OR=2.58, 95%CI 1.54-4.31), and hypertension (OR=1.99, 95%CI 1.17-3.39). Single status, unemployment, and moderate-income increased the likelihood of extreme polypharmacy along with multimorbidity. Extreme polypharmacy increased the risk of constipation, insomnia, and loss of appetite. A majority of participants (63.4%) were adherent to medication. Unintentional and purposeful non-adherence were 28.4% and 4.0% respectively. Medication adherence reduced with delayed drug intake (OR=0.36, 95%CI 0.23-0.55), beliefs on organ damage (OR=0.49, 95%CI 0.31-0.75), poor accessibility to drugs (OR=0.36, 95%CI 0.23-0.55), and disease-related factors as regurgitation (OR=0.27, 95%CI 0.10-0.74). Increased odds were observed with the necessity (OR=2.56), effectiveness (OR=2.29) and the identification of drugs (OR=1.59).

Conclusions & Recommendations: Polypharmacy was high among the elderly and was associated with multimorbidity. Despite negative connotations polypharmacy neither decreased medication adherence nor was associated with its consequences except at extreme polypharmacy. The Multi-disciplinary approach in developing a combined management plan would reduce polypharmacy while improving health literacy would increase medication adherence among the participants.

Keywords: Elderly, Polypharmacy, Extreme polypharmacy, Medication

0057. Wickramaarachchi, C.M.

Prevalence , correlates and outcomes of poor quality sleep evaluation of a school based educational intervention to improve sleep quality among grade ten students in Colombo district.

MD Community Medicine – 2019

SC 0015

Sleep is a fundamental human need. Constant increase in academic expectations and demands in the collegiate cycle at present, has led to compensation of the need for a good quality sleep from present-day adolescents. Though globally, the concept of Poor Quality Sleep (PQS) and its consequences among adolescents had been extensively researched in different study settings, Sri Lankan research culture is devoid of any form of community level sleep studies among school children.

Objectives :

1. To determine the prevalence, correlates and selected outcomes of PQS among grade ten students in government schools in Colombo District.
2. To evaluate the effectiveness of a school based educational intervention to improve PQS among grade ten students in government schools in Colombo District.

Methods : A school based, cross sectional descriptive study was conducted among 1315 grade ten students from twenty-eight government schools in Colombo District, selected by multistage cluster sampling technique, to determine the prevalence of PQS, using culturally adapted and validated Pittsburgh Sleep Quality Index (PSQI) questionnaire. Correlates and outcomes of PQS were identified in a subsample of 410 students. A Quasi Experimental study among 250 school children was carried out to evaluate effectiveness of a school based educational intervention to improve PQS. Ethical clearance for the study was obtained from the Ethical Review committee of University of Kelaniya.

Results: PSQI revealed a good consensual validity. The response rate was 95.2%. The prevalence of PQS and very PQS among Grade ten students were 37.5% (95% CI = 34.9% - 40.2%) and 24.4% (95% CI = 22.0% - 26.8%) respectively.

Higher frequency of Electronic Entertainment and Communication Devices (EECD) usage (AOR=3.7, 95% CI=2.2-6.2, $p<0.001$) and perceived encounter of disturbance by EECD on sleep (AOR=4.3, 95% CI=2.4-7.7, $p<0.001$) and habitual skipping of dinner (AOR=1.7, 95% CI=0.9-2.8, $p=0.053$) were reported as significant positive predictors for PQS in the Multiple Logistic Regression model.

Frequent reading of books before bedtime (AOR=0.6, 95%CI=0.3-0.9, p=0.021) reported negative association with PQS. Multiple Linear Regression model for outcomes of PQS revealed a significant (p<0.001 and p=0.03 respectively) negative predictor effect of -0.7 on Academic achievements and negative predictor effect of -0.6 on Intelligence.

Sleep education intervention outcome variable-poor quality sleep, reported a statistically significant {t (243.99) =8.06, p<0.001} mean difference in Post Intervention PSQI mean scores between the Intervention group and the control group (-2.26,95% CI= -2.8 - -1.7). Furthermore, a significant positive correlation between Pre-PSQI scores (r=0.4) and Post-PSQI scores (r=0.6) were reported. Sleep intervention failed to elicit difference in outcome variable - sleep hygiene.

Conclusions and Recommendations : The Sinhala Translated and culturally validated student version of Pittsburgh Sleep Quality Index (PSQI-SS) is a valid and reliable instrument to assess PQS among Grade ten students in Sri Lanka. The prevalence of PQS among Grade ten students in government schools in Colombo District was high and majority of significant correlates were lifestyle related and dietary factors. Cognitive behavioural therapy and mindfulness based, multicomponent, in school educational group intervention was found to be highly significant in improving PQS among grade ten school children in Colombo District.

The study emphasizes the necessity of good quality sleep culture among school children. It is recommended to encourage parents, teachers and society to encourage positive and supportive good quality sleep environment.

Furthermore, it is recommended to consider implementing the effective sleep educational intervention at school level to rectify problems related to PQS.

Keywords: Poor quality sleep, Adolescents, PSQI, sleep educational interventions

0058. Widanapathirana, N.D.

An Assessment of universal health coverage for patients with diabetes mellitus type 2 in the Gampaha district.

MD Community Medicine - 2019

SC 0120

Background: Sri Lanka has the highest prevalence of diabetes mellitus in the WHO Southeast Asia region. Diabetes mellitus is the second leading cause of Disability Adjusted Life Years in the country and pose a significant burden to the

healthcare system and the economy of the country. The social, economic and psychological burden on patients is immense.

Objectives: To assess universal health coverage for people aged 40-69 years with diabetes mellitus type 2 in the Gampaha district focusing on unmet needs, service coverage, equality of service coverage, household economic burden and equality of household economic burden.

Methods: A mixed method approach was used. A qualitative inquiry was undertaken to explore the unmet needs associated with healthcare seeking, self-management of diabetes and financing healthcare services among patients with diabetes mellitus by conducting Focus Group Discussions with individuals with diabetes mellitus type 2 and Key Informant Interviews with diabetes care providers. A descriptive cross-sectional study sampled 479 individuals with diabetes mellitus aged 40-69 years from the Gampaha district using a multi-stage cluster sampling method. An interviewer administered questionnaire was used to obtain data on service coverage for diabetes mellitus, based primarily on American Diabetes Association standards of medical care in diabetes, among individuals already diagnosed with the illness. A similar instrument collected data from the newly diagnosed patients with diabetes mellitus. Both instruments were administered by trained pre-intern medical officers who also obtained physical measurements of study participants assisted by health promotion graduates. Bio-chemical assays were carried out by an accredited private laboratory to assess the achievement of glycaemic, lipid and renal function targets in patients with a history of the illness. The household economic burden due to diabetes mellitus was assessed using a questionnaire administered by trained pharmacy graduates to participants already diagnosed with the illness at the time of recruitment. The service coverage and effective service coverage were described with descriptive statistics with differences of coverage between government and private sector tested using the Chi square test. The equality of service coverage, effective service coverage and household economic burden was assessed using absolute inequality and relative inequality measures across equity stratifies of sex, age, area of residence, highest education level, employment status and household income.

Results: The unmet needs of diabetes patients were most pronounced in relation to the awareness of the causation and complications of diabetes and side effects of antihyperglycaemic medication. Barriers to uptake of lifestyle modification

guidance such as busy lifestyle, competing priorities and breaking away from dietary habits were highlighted. Healthcare provider's perspective shed light on supply side barriers such as lack of consultation time, material and human resources in the government sector and lack of adherence to clinical practice guidelines overall.

Of 2,106 participants who consented to participate in the study, 1,767 participated giving a response rate of 83.9%. At the time of recruitment, 404 participants already had type 2 diabetes mellitus and 401 of them were included giving a response rate of 99.2%. The majority were female (57.9%) and 44.9% were aged 60-69 years. The majority of respondents had a regular provider for care of diabetes mellitus (n=362, 90.3%). Most of them chose government sector healthcare institutions for regular care of diabetes (n=192, 53.0%).

The prevalence of unmet needs for physician care for diabetes was 16% (n = 64, 95% CI: 12.5%-19.9%) mostly due to lack of time to make the clinic visit (n = 31, 48.4%). Unmet needs for anti-hyperglycaemic medicines or insulin were reported by only 16 respondents (4.2%, 95% CI: 2.4%-6.6%). Unmet needs for investigations were reported by only 24 respondents (6.0%, 95% CI: 3.9%-8.8%). The service coverage for diabetes mellitus was assessed based on nine key interventions under the six domains of care, namely, patient-centred collaborative care, lifestyle management, glycaemic control, cardiovascular disease and risk management, microvascular complications and foot care, and diabetes self-management education using the minimal coverage criteria appropriate for each intervention. The lowest coverage of 32.9% (n = 126) was reported for screening for neuropathy and foot care which was assessed using the criteria of 'advice received on foot care and feet inspected at least once and/or examined for sensory loss within the past 12 month's. The highest coverage of 97.1% (n = 372) was reported for blood pressure control assessed on the criteria of 'blood pressure measured at least once during the past 12 month's. Only four out of the nine selected interventions had a coverage exceeding 50%, namely, collaborative care (n=319, 83.3%, 95% CI: 79.3% – 86.8%), glycaemic control (n = 351, 91.6%, 95% CI: 88.4% – 94.2%), blood pressure control (n = 372, 97.1%, 95% CI: 94.9% – 98.6%) and blood lipid control (n = 273, 73.8%, 95% CI: 69.0% – 78.2%). The coverage of key interventions across sex, age, area of residence, highest education level, employment status and household income level were not significantly

different by different groups indicating equity of service coverage. Effective outcomes were defined for the six domains of care. More than 50.0% of respondents were able to achieve the effective outcome only for nephropathy care (n = 332, 86.7%, 95% CI: 82.9% – 89.9%) defined as having an e-GFR \geq 60mL/min/1.73 m² and blood pressure control (n = 250, 65.3%, 95% CI: 60.3% – 70.0%) defined as having a blood pressure reading <140/90 mmHg. The overall effective coverage of diabetes care was only 13.9% (95% CI 10.9% – 17.3%). The relative inequalities favoured the most vulnerable across sex, age, area of residence, highest education level and employment status and showed no inequities. The relative inequality was 1.4 for the household income category favouring the income groups 3, 4 and 5. However, the effective coverage of patients was not significantly different across equity stratifies of age, sex, education, sector of residence, employment status and income.

The household economic burden was assessed based on outpatient care costs borne by 260 respondents and their families during the month preceding the interview and inpatient care costs borne by 16 during the preceding 12 months. The total median cost of an outpatient visit including direct and indirect costs of care was LKR 860.0(IQR: LKR 284.5 – 1970.0). It was significantly more for patients who obtained care from the private sector (LKR 1780.0, IQR: LKR 1000.0 – 3400.0) compared to patients who sought care from the government sector (LKR 320.0, IQR: LKR 190.0 – 950.0). The highest proportion of direct costs borne by patients who sought care from the government sector institutions was spent on investigations (39.0%) whilst the cost of medicines constituted the highest proportion spent for direct costs by patients who received private sector services (42.0%). Catastrophic expenditures for diabetes care were experienced by 28 respondents (12.2%) that included 19 (14.8%) from income groups one and two. No difference in the cost burden was observed across age, sex, area of residence and employment status of respondents. People with higher educational attainment spent significantly more (LKR 1000.0, IQR: LKR 340.0 – 2245.0) than those with lower educational achievement (LKR 760.0, IQR: LKR 235.0 – 1575.5) (p = 0.039). People in income groups three to five also spent significantly more than (LKR 1205.0, IQR: LKR 368.8 – 2276.2) people from income groups one and two (LKR 740.0, IQR: LKR 230.0 – 1612.5) (p = 0.004). These findings illustrate the absence of inequities in healthcare cost burden due to diabetes

mellitus at household level as observed disparities were prominent in the least vulnerable groups. One out of 16 hospital admissions was in the private sector. The total median cost of a hospital admission for diabetes or a related complication was LKR 3,990.0 (IQR: LKR 1,125.0 -32,212.0).

Conclusions and Recommendations: The unmet needs of diabetes mellitus arose mainly from a gap in awareness of the disease and its management compounded by low levels of patient empowerment for self-management. More investment is recommended on patient education initiatives and self-management education strengthened by trained human resources for delivering patient-centred collaborative care. An entry point for patient-centred collaborative care in the government sector would be the current primary care reforms where a population is empanelled to a healthcare team in the primary level hospitals providing the backdrop for establishing long-term patient-provider relationships which are beneficial for long term illnesses such as diabetes mellitus. Supplier side gaps in meeting patient needs were related to lack of resources, overcrowding of public sector healthcare institutions and lack of adherence to clinical protocols. The reported unmet needs by respondents was low. The service coverage for key interventions defined by minimal coverage criteria were suboptimal with only four out of the nine key interventions being delivered to more than 50% of respondents. The achievement of effective outcomes of care was substantially poor. The overall coverage of diabetes care failed to be effective for at least one fifth of the total sample with diabetes mellitus. Adoption of evidence-based guidelines contextualized to the local setting is highly recommended for diabetes care with national regulatory mechanisms to strengthen enforcement to improve service coverage. An essential service package that conforms to clinical practice guidelines need to be implemented to benchmark resource gaps in each level of government health sector hospitals for provision of optimal care for diabetes. Required funding for fulfilment of identified resource gaps should be prioritized in annual budgeting of the Ministry of Health, Nutrition and Indigenous Medicine and incrementally allocated to address gross deficiencies. The service coverage and effective service coverage were equitable across selected equity stratifies. Ensuring equity in healthcare access and outcomes should be a dominant focus of any policy or strategy to improve service coverage and the quality of services provided for diabetes mellitus. Household costs were equitably distributed.

Household economic burden due to diabetes mellitus was profoundly high. Providing financial risk protection should be a priority of the government, particularly for low-income families; this can be achieved through ensuring healthcare access closer to home and strengthening service delivery through strengthening primary level healthcare institutions.

Keywords: Diabetes mellitus type 2, Universal health coverage, Effective coverage, Household economic burden, Equity of healthcare, Sri Lanka

Health Sector Disaster Management

0059.Akmeemana, A.K.D.N.

Knowledge about landslides, mitigation and disaster preparedness among Grama Niladharis in Badulla district.

Postgraduate Diploma in Health Sector Disaster Management – 2018

D 4875

Introduction: Sri Lanka is an island, predisposed to natural disasters. Badulla district is highly prone to landslides annually with the activation of monsoon rainfalls. The aim of this study is to assess the knowledge about landslides, mitigation and Disaster preparedness among Grama Niladharis in Badulla district.

Methodology: A community based descriptive cross-sectional study was carried out among 286 Grama Niladharis working in seven divisional secretariat areas of Badulla district. A pre-tested self-administered questionnaire was used to collect data. A descriptive method of statistical analysis was undertaken in presenting the findings in relation to the specified objectives.

Results: A total of 286 respondents participated for the study. The non-response rate was 7.75%. (n=16). Majority of participants were male (53.5%, n=153) and 85.3% (n=244) were Sinhalese. In this population many (36%, n=103) had work experience of five months to five years and many were in grade III career state (53.5%, n=153). The mean income of the population was Rs.34,748.00. Majority of participants (82.2%, n=235) had prior experience in management of a landslide with 231 (80.8%) Grama Niladharis having identified land slide prone areas in their divisions. Some had (17.7%, n=49) self- experience of losing their own properties or houses due to landslides also 21.7% participants (n=62) living in the same working division. Television is the still main mode (94.1%, n=269) of media of getting news by the participants and only half of them (50.7%, n=145) used internet. Majority of participants (98.3%, n=281) use a mobile phone and almost all (97.6%,

n=279) of them displayed its' number in their office. Majority of the participants (90.2%, n=258) had received some training of disaster management in their working years and 78.7% (n=225) of them had conducted training programmes to their villages. In this study, 30.1% (n=86) participants had good knowledge on landslides and mitigation. The Grama Niladhari's who were above 40 years had significantly good knowledge on landslides and mitigation ($p = 0.046$) and those who had work experience more than 20 years also had good knowledge on mitigation ($p = 0.001$). The knowledge about preparedness was good in 29.7% (n = 85) participants towards landslides. Significantly good preparedness was observed among those who had own experience of managing a landslide ($p = 0.002$). Working experience had a significant association ($p = 0.034$) with preparedness.

Conclusion: Overall our study concludes preparedness, mitigation and knowledge on landslides among Grama Niladharis in Badulla district is not sufficient. Age, ethnicity, education qualifications and working experience significantly associated with the level of knowledge on landslides and mitigation. Majority of participants had poor preparedness towards landslides. Training programmes based on hands-on training may benefit the Grama Niladharis's in this district.

0060.Basnayake, K.D.B.

Assessment of the level of preparedness, the knowledge and safety practices of labor cadre to prevent accidental injuries and mass causality incidents of the central expressway construction project- section 2

Postgraduate Diploma in Health Sector Disaster Management – 2018

D 4864

Background : Man-made disasters and emergencies are getting more common globally with the rapid development and globalization. There are 2.3 million deaths around the world due to occupation related accidents or diseases every year according to the International Labor Organization. The “Central Expressway Project” (CEP) is the largest highway construction project planned in Sri Lanka involving thousands of local and foreign personnel, who are frequently exposed to hazards capable to cause serious injuries and disasters. However the level of preparedness and safety measures to prevent such encounters are scarce and need to be addressed profoundly.

Objectives : To assess the level of preparedness, the knowledge and safety practices of labor cadre to prevent accidental injuries and mass casualty incidents of the Central Expressway Project, Section 2 during the construction phase.

Methodology: Descriptive cross sectional study was carried out among, the labor cadre of Section 2. There were 407 candidates selected according to the simple random sampling method. A pre tested self-administrated questionnaire was used to obtain necessary information.

Results : Majority of the labor cadre in the project were 30 years and below (62.90%). The study group comprised of more males (84.50%) than females. There were Sinhala majority (88.20%), with Tamils (6.9%) and Muslims (4.6%). Majority educated up to O/Levels (63.40%) and minority (36.60%) were educated up to A/Level and above. Most of laborers (60.70%) had job experience of 03 years or less. 74.14% participants had good knowledge regarding serious injury causing hazards, only 23.30% of the labor cadre had good knowledge regarding safety practices and available safety measures to prevent injuries and the majority 76.70% was not having good knowledge. Only 23.30% of the laborers were having good level of knowledge regarding the basic first aid and available facilities in an emergency. According to the study, Age above 30 years of the selected labor cadre was significantly associated [$p = 0.015$] with good knowledge regarding the hazards and serious hazards. Other factors like Sex and level of education had no statistically significant association with knowledge regarding hazards, available safety measures or basic first aid. Job experience above 03 years was significantly associated with good level of knowledge [$p < .000$] regarding the hazards and awareness of serious hazards. There was a statistically significant association [$p < .000$] between the safety training within 06 months with good knowledge of the safety practices and available safety measures. Further, there was a statistically significant association [$p < .000$] between the first aid trained subjects with good knowledge of basic first aid.

Conclusion : The overall knowledge of hazards, safety measures and first aid of the labor cadre of the Central Expressway Project Section 2 was not good. Therefore the level of preparedness for prevent accidental injuries and mass casualty incidents was not adequate. The good knowledge of hazards and serious hazards was associated with age and job experience of the labor cadre and it was not associate with sex, ethnicity, or level of education. Frequent safety training and first aid training was

significantly associated with good knowledge regarding the safety and first aid to prevent morbidity and mortality.

Recommendations : Frequent training of occupational safety and First aid for the labor cadre is essential and the required measures must be implemented by the relevant authorities. It is recommended to formulate an active mechanism to participate all the personnel for safety training and should ensure these type of training programs are conducted in regular intervals preferably in less than six months periods. Young and personnel with minimum job experience have to be instructed to obtain advices from senior workers with higher job experience.

0061. Chathrapani, O.K.P.

Impact of floods on health sector in Rathnapura district.

Postgraduate Diploma Health Sector Disaster Management – 2020 SC 127

There is an increase trend of natural disasters in Sri Lanka. Floods are the most frequently occurring natural disasters identified throughout the year. Ratnapura district is reported as one of the most vulnerable areas for floods due to its topographical features. Elapatha divisional secretariat division in Ratnapura district is recorded as the highest number of families affected due to floods in 2018. Therefore, Elapatha divisional secretariat division was selected as a representative of Ratnapura districts in this study.

This study concentrates on the traumatic and non-traumatic health risk in the flood affected community, pattern of communicable diseases, economic loss due to negative impact of floods on health and the effectiveness of public health care during floods in 2017 to 2019 period.

This study was conducted as a cross sectional study in 87 households selected randomly in Elapatha divisional secretariat division. The statistical relationship between variables were examined by using Chi-square test. The variable “number of families affected” is represented as the proxy variable of the impact of flood. The findings reveal that there is a strong relationship between the number of families affected and the number of families had communicable diseases during floods. Therefore, it can be concluded that the impact of flood on health sector statistically significant. Recommendations highlighting the role of communities and other stakeholders in flood related health risk management are proffered.

0062.De Silva, E.P.M.

Gender based violence in disaster situation: Identification and management competencies in public health staff in selected MOH Areas in Galle District.

Postgraduate Diploma in Health Sector Disaster Management – 2018

D 4872

Background: Gender based violence is a human right issue that is common but under reported in the world. GBV incidents has been noted to increase in disaster situations. Public health staff is the key responsible people in post disaster health management of disaster victims and therefore their competencies in managing GBV in crisis situation is important. Present study therefore investigated knowledge on GBV management in disaster situation among different categories of public health staff workers.

Methodology: A descriptive cross sectional study was carried out in conveniently selected 8 MOH areas in Galle district. All health care workers working in these MOH areas were selected for the study. Self-administrated questionnaire assessed the awareness and knowledge on prevention and management of GBV in disaster situation.

Results: In the sample of 200 public health workers, majority was females (75.5%). Among the respondents, majority of them were public health midwives (65.5%) and public health inspectors (39 %). It was found that only 36.6 % (n=72) participants had previous experiences on GBV management among internally displaced people. Only 23.5% (47/200) of respondents had some training on disaster management and among them only 34.0% (n=72) were taught about GBV management in disaster situations. Knowledge on awareness (mean=28.36,SD=3.92), prevention (mean=31.00,SD=3.78) and management (mean=18.91,SD=2.52) of GBV was moderate among the selected public health staff. There was no significant difference in knowledge on awareness ($F(3, 199) = 1.12, p = .34$), prevention ($F(3, 199) = .47, p = .69$) and management ($F(3, 199) = 1.29, p = .27$) of GBV between the respondents who got the training & who did not. We compared the staff members who had specifically GBV training and no GBV training. The results revealed, there was no significant difference in awareness ($t(198,200) = .76, p = .44$), prevention ($t(198,200) = 1.00, p = .31$), and management ($t(198,200) = .34, p = .73$).

Conclusions and Recommendations: Knowledge on awareness, prevention and management of gender-based violence in disaster situations among the public health staff is not satisfactory. Only a minority have obtained training in disaster management and not all these trainings have addressed GBV management in disaster situations. Thus, it is recommended to train the public health staff in identification and management of GBV in disaster situations.

Keywords: Gender based violence, Public health staff, Disaster management

0063. De Silva, M.E.

Knowledge and attitudes on disaster preparedness and practices of sharing disaster related information via social media platforms, among students in grade ten in two selected schools in the Colombo metropolitan area.

**Postgraduate Diploma Health Sector Disaster Management – 2018
D 4868**

The use of social media to support the disaster management cycle (DMC) and the stages of preparedness, response and recovery is increasing. Organizations including the American Red Cross (ARC) have developed strategies to engage users on social media platforms such as Face book, Twitter and Instagram.

In March 2012, ARC launched a digital volunteer program to engage in a social conversation with users during disaster operations.

Although social media can positively impact disaster relief efforts, it does not provide an inherent coordination capability for easily coordinating and sharing information, resources, and plans among disparate relief organizations. Nevertheless, crowd sourcing applications based on social media applications such as Twitter offer powerful capability for collecting information from disaster scenes and visualizer data for relief decision making.

Children are the future generation who can use all these information technologies to develop applications in the field of disaster management.

In this research project we assess the knowledge and attitudes of school children and the use of social media platforms in disaster scenarios with special emphasis on geological data and crowd sourcing to get an idea of Sri Lankan standpoint in this context, as no such researches have previously been done.

Social media cannot and should not supersede current approaches to disaster management communication or replace existing infrastructure, but if managed

strategically, they can be used to bolster current systems. Now is the time to begin deploying these innovative technologies while developing meaningful metrics of their effectiveness and of the accuracy and usefulness of the information they provide. Social media might well enhance systems of communication, thereby substantially increasing the ability to prepare for, respond to, and recover from disastrous event: that threaten people and infrastructure. Given the increasing frequency and the extent of varying levels of disasters that occur now in the world, which affect our daily lives, it is imperative for everyone to have disaster management knowledge, awareness and preparedness among the individuals of any institution, regardless of age. It is even more critical for school students. They are expected to go to the society and deal with all these disasters and find solutions' in mitigation and response as the responsible citizens of the future. Social media will be a great platform for these students in achieving the above if harnessed properly and responsibly without any glibness.

0064.Dinesha, K.D.T.

Awareness, practices and preference related to the existing early warning system on floods and landslide disasters among residents in Ratnapura MOH area.

Postgraduate Diploma in Health Sector Disaster Management – 2018

D 4867

Introduction: Floods and landslides lead to catastrophic losses and destruction. Geographic differences, heavy rainfall and the presence of Kalu river basin make Ratnapura District highly vulnerable for both these disasters. Currently early warnings for flood disasters are formulated by the Irrigation Department. Landslide early warnings are generated by the National Building Research Organization. However, last mile communication systems for early warnings need to be fine-tuned.

Objectives: The aim of the study was to describe the awareness, practices and preference related to the existing early warning systems on flood and landslide disasters among residents in Ratnapura MOH area.

Methodology: A community based cross-sectional study was carried out in Ratnapura MOH division from September to October 2018. Three staged sampling method was used to select the participants. A sample of 336 disaster prone participants was recruited. An interviewer administered questionnaire was used to collect data. The data was transformed into data sheets in SPSS version 20. Quantitative data was described using mean and standard deviation (SD). Qualitative data was described in proportions and percentages. Scoring systems

were used to assess the knowledge on good practices associated with early warnings and preparedness and items to include in the emergency evacuation package.

Results: The majority of (n = 125, 37.2%) of the sample was recruited from Ratnapura old town area. The population was relatively young with 52.1% of the participants (n = 175) being above the age of 37 years. The mean age was 39.3 years (SD = 14.6). The sample was female dominant. A large percentage (n = 215, 64%) had witnessed floods in their lifetime. Landslide exposure was only seen in 20% of the participants. Above 40% believed there was no such early warning system available for both floods (n = 148, 44%) and landslides (n = 122, 36.3%). Most respondents rightfully chose to evacuate immediately upon receiving the warning (n = 304, 90.5%). Knowledge on good practices related to early warnings and preparedness was satisfactory in most of the participants (n = 239, 71.1%). A significant association was seen between the knowledge on warning and preparedness and the level of education () where participants qualified with Advanced level or more had better knowledge. Nearly equal numbers preferred Sirens (n = 103, 30.7%) or Television (n = 94, 28%) as warning methods for floods and landslides.

Conclusions and recommendations: This study demonstrated lack of awareness, and underuse of existing early warning methods in vulnerable areas. Knowledge on disaster preparedness and related practices were satisfactory. Community centered early warning systems needs to be generated and practiced. Knowledge on disaster preparedness requires to be strengthened.

Keywords: Early warnings, Floods, Landslides, Ratnapura, Disaster

0065.Dissanayake, I.N.F

Preparedness knowledge and attitudes of medical and nursing officers in managing dengue outbreaks at Colombo East Base Hospital.

Postgraduate Diploma in Health Sector Disaster Management - 2020

SC 129

Introduction: Dengue fever is one of the common mosquito-borne diseases that cause a wide range of symptoms from acute febrile illness to death in tropical and sub-tropical countries. Preparedness, knowledge, and attitudes of medical and nursing officers who are the first line healthcare staff in managing dengue outbreaks are not yet well known across the country and concern is varied in context and place.

Therefore, it is important to assess the preparedness, knowledge, and attitudes of medical and nursing officers in managing dengue outbreaks.

Objectives : The objective of this study was to assess preparedness, knowledge, and attitudes in managing dengue outbreaks of medical and nursing officers at the Colombo East Base Hospital.

Methods : A descriptive cross-sectional study was conducted to assess the preparedness, knowledge, and attitudes in managing dengue outbreaks among medical officers and nursing officers. All medical officers and nursing officers working in medical wards, PCU and OPD at Colombo East Base Hospital were included in the study. Medical and nursing officers who were on long leave, who were working in surgical, obstetrics, gynecology and intensive care units were excluded from the study. A pretested self-administered questionnaire was used to collect the data. Preparedness of the hospital to manage a dengue outbreak was assessed using an observational checklist administered by the principal investigator. Data were analyzed using the Statistical Package for Social Sciences software and presented as frequency distributions. Ethical clearance was obtained from the Ethics Review Committee, Post Graduate Institute of Medicine, University of Colombo.

Results The response rate was 94.1% (96/102). Most of the study participants belonged to the age group of 31-40 years (n=49, 51%) and were females (n=75, 78.1%). A majority of the medical officers (n=15, 39.5%) were attached to the outpatient department and half of the nursing officers (n=29) were attached to the medical ward. A majority of medical officers (n=35, 92.1%) and nursing officers (n=48, 82.8%) scored 50 or more in total knowledge score. However, some gaps existed related to the incubation period of the dengue virus and the monitoring of the patients during the febrile phase. Most of the study participants disagreed that currently available ward facilities in the hospital are adequate to manage dengue outbreaks (n=43, 44.8%), currently available staff in the hospital is sufficient to manage dengue outbreak situations (n=53, 55.2%), sufficient to have training programs only during the outbreak situations (n=80, 83.3%) and participating in clean-up activities in the hospital is an obstacle for duties (n=38, 39.6%).

Ninety-three study participants (96.3%) were capable to manage dengue according to the National Dengue Guidelines, while 63 (67.7%) said that they have not been

trained on dengue management. The study revealed that medical wards do not have enough beds for the patients (90% of bed availability), while pediatric wards do not have adequate monitors (57.7% availability). Conducting routine investigations such as packed cell volume and liver function tests are satisfactory; yet, full blood count takes much more time compared to the expected time. Notifications of the dengue cases through DenSys were not done.

Conclusions and Recommendations: The findings of the study revealed that the study participants did not have enough training on dengue management. Therefore, conducting continuous professional development programs and in-service training programs targeting dengue management is useful to improve knowledge and skills among medical and nursing officers in dengue management. Timely notifications of dengue cases through DenSys should be done.

Keywords: Dengue, Knowledge, Attitudes, Practices, Preparedness

0066. Jayasinghe, A.P.B.

Preparedness of Grama Niladaris of Ratnapura district in prevention and response to sexual and gender based violence at camp settings in disaster situations.

Postgraduate Diploma in Health Sector Disaster Management -2018 D 4902

Background: Disasters increases the risk of sexual and gender-based violence. Prevention of sexual and gender-based violence is a minimum standard of the health action in humanitarian response. Displacement of the population may come across with sexual and gender related issues at the camps where they get temporary shelters. In Sri Lanka the camp management is done by multidisciplinary team approach where multiple stakeholders lead by the government will be handling the camp management during disaster situations in which the Grama Niladhari is the grass root level government official.

Objectives: To assess the preparedness of Grama Niladharis of Ratnapura District in prevention and response to Sexual and Gender Based Violence in camp settings during disasters.

Research Methodology: A descriptive cross-sectional study was conducted in Ratnapura district including Grama Niladharis working in the Ratnapura district who has working experience of more than six months. 502 Grama Niladhari in all 17 divisional secretory areas of the Ratnapura district were included to achieve the required sample size. A self-administered questionnaire was used for data collection.

Ethical clearance was obtained from the ethics review.

Results: Number of participants were 455 [response rate 90.63%] and the sample consisted of more females [50.1%]. Only 69.0% of the participants had received any training on camp management. Overall knowledge is satisfactory in majority [77.6%] of the participants in prevention and response to SGBV in disaster situations. More than 50% of the participants had favorable attitudes. More than 50% had been engaged in camp management during their working years and only 82.6% of them had disaster preparedness and response plan for their division. Committee of the National Hospital Sri Lanka.

Conclusions and Recommendations: Although majority of the participants had satisfactory knowledge and attitudes, a remarkable percentage of the participants were not satisfactory about certain important aspects. Training programs aiming to improve the knowledge will be helpful. Relevant authorities should take necessary action to make sure that all the GN division to have a disaster preparedness and response plan and to enhance the infrastructure facilities in pre-identified shelter sites.

Keywords: Grama Niladari, Sexual and Gender Based Violence, Disaster Situations

0067. Gaffoor, T.H.

Preparedness, knowledge and attitudes of medical and Nursing officers in managing Ebola and MERS CoV infectious diseases.

Postgraduate Diploma in Health Sector Disaster Management – 2020

SC 184

Introduction: Recent outbreaks suggested that healthcare-associated transmission of Ebola and MERS CoV disease is high due to close contact with an infected person. In response to increasing travel and trade, disease transmission across the world is high. Hence, an epidemic in one part of the world could be a threat to the other part. Therefore, preparedness in managing Ebola and MERS CoV patients at each healthcare institution is crucial. Medical and nursing officers are the front-line staff in managing an outbreak and risk their lives when handling the patients at the hospital. Therefore, assessing preparedness, knowledge, and attitudes in managing Ebola and MERS CoV patients is essential in identifying any bottlenecks and improve the quality of service.

Objectives : The study was conducted with the objectives of assessing the preparedness, knowledge, and attitudes in managing Ebola and MERS patients among medical and nursing officers in the National Institute of Infectious Diseases.

Methods: A descriptive cross-sectional study was carried out at the National Institute of Infectious Diseases. The study consisted of a review of health facility infrastructure, availability of equipment, outbreak surveillance and assessing the knowledge and attitudes in managing Ebola and MERS patients among medical and nursing officers. A total of 180 study participants consisting of 40 medical officers and 140 nursing officers were included for the study.

A self-administered questionnaire was used to assess the knowledge, attitudes, and preparedness of medical and nursing officers. A checklist administered by the principal investigator was used to assess the hospital preparedness. Data were analyzed by using Statistical Package for Social Sciences software. Ethics clearance was obtained from the Ethics Review Committee, Post Graduate Institute of Medicine.

Results : Availability of personal protective equipment for Ebola/MERS CoV outbreak management such as PPE for standard and droplet precautions, impermeable gowns, N95 masks, and eye protection ware was adequate. However, there were no Airborne Infection Isolation Rooms available. Regular evaluation and updates on, hospital infection control protocols and procedures for Ebola disease are being carried out but not for MERS CoV. Similarly, protocols and procedures for screening and minimizing healthcare personnel exposure for Ebola disease is available but not for MERS CoV. The response rate was 73.8%. Half of the study participants (n=67, 50.4%) had not received training on Ebola/MERS CoV patient management and nearly half (n=60, 45.1%) of the study participants did not know the type of PPE that has to be worn when managing Ebola/MERS CoV patients. Moreover, most (n=88, 67.2%) of the study participants did not know the notification process of Ebola/MERS CoV infection.

A majority (n=30, 93.8%) of medical officers and 65 (64.4%) nursing officers reported more than 50% in the total knowledge score in managing Ebola disease, while out of 32 medical officers 26 (81.2%) and among 99 nursing officers 52 (51.5%) scored more than 50% in the total knowledge score related to the MERS CoV. Nearly one-third (n=42, 31.8%) of the study participants indicated that they

are reluctant in managing Ebola/MERS CoV patients, and 25 (18.8%) indicated that they might not come to the hospital if there is MERS CoV/Ebola patient.

Conclusions and Recommendations : Most of the study participants had satisfactory knowledge and attitudes in managing an outbreak of Ebola/ MERS CoV disease but there were gaps. Conducting regular training programmes, simulation exercises and drills are essential in improving the knowledge and skills among medical and nursing officers. Improving isolation rooms facilities should be done on a priority basis in this specialized hospital.

Keywords: Ebola, MERS CoV, Knowledge, Attitudes, Preparedness

0068.Jayawardena, S.D.S.V.

Assessment of knowledge, attitudes and preparedness on chemical accident prevention among workers in medium and small-scale paint manufacturing industries in Ekala free trade zone area.

PG Diploma in Health Sector Disaster Management – 2018 D 4874

Introduction: Chemical usage and related accidents now has become a global issue through industrialization. A free trade zone is a key area where multiple chemical manufacturing plants and industries are functioning with an increased risk of chemical accidents.

Objective: To assess knowledge and attitudes among workers and individual and organizational level preparedness on chemical accident prevention in medium and small- scale paint manufacturing industries in Ekala free trade zone area.

Methodology: A descriptive cross-sectional study was conducted in small and medium scale paint manufacturing industries in the Ekala Free Trade Zone. A pre-tested self- administered questionnaire was used as the study instrument which was distributed among all workers of the said industries.

Results: The total participants for this study were 175 (included both workers and supervisors) of all the paint manufacturing factories in Ekala FTZ. Most of the respondents were in the age group of 20-30 (42.1%) years and most of the workers (45.4%, n=69) were only qualified up to O/L. However, nearly 60% (n=69) had 1-10 year's work experience. Nearly 90% respondents answered correctly on the knowledge-based questions. The attitudes towards on chemical accident prevention were considerably satisfactory. More than 90% respondents demonstrated satisfactory level practices of individual preparedness. In terms of checklist on organizational preparedness over 85% agreed on satisfactory level of preparedness

in preventing chemical accidents.

Conclusions and Recommendations: It is evident by the results of this study that the employees of these industries have a basic knowledge in preventing chemical accidents. However, the capacity of the workers need to be developed in the areas of handling fire extinguishers, carrying out basic first aid in case of an emergency and usage of personal protective equipment.

Keywords:FreeTradeZone,Chemic alaccident prevention,Paint manufacturing industries

0069. Karunaratne, C.A.

Profile of pediatric burns: pattern of injuries , first aid and home safety measures practiced by caregivers of children attending to burns treatment unit of Lady Ridgeway Hospital.

Postgraduate Diploma in Health Sector Disaster Management – 2020 SC 193

Background : Household accidental burns are one of the common causes of childhood morbidity and mortality. They thrive with limitless curiosity making them vulnerable to face accidental burns. However, these injuries are preventable if necessary home safety measures are practiced and the impact of such burns can be mitigated if timely, adequate, appropriate first aid measures are practiced.

Objective of describe accidental burn injuries among children attending Burnstreatment unit at Lady Ridgeway Hospital and home safety measures practiced by their caregivers to prevent household accidental burns.

Methods: A hospital-based cross-sectional study was carried out among 162 caregivers attending Burns treatment unit at LRH. All caregivers who attended the burns treatment unit during the study period who fulfilled the eligibility criteria were included with a 95% response rate. A pre-tested interviewer-administered questionnaire and data extraction form were used to find out the type/mechanism and severity of the burn injury, home safety measures practice by the caregivers to prevent household accidental burns and first aid measures taken by them following the burn injury. Data on severity and grading of the burn were obtained by tracing bed head tickets. The factors associated with first aid measures were also analyzed.

Results : Majority of the caregivers were females (n= 149,92%),housewives (n=113,69.8%), aged 28-37 years (n=76,46.9%). Children below 4 years were commonly affected by accidental burns (n=106,65.4%). Majority of the children

who sustained burn injuries had no previous co-morbidities (n=157,96.9%). Scalds accounted for most of the burns n=105(64.8%,95%CI58.0-72.8).In 90% of the houses, unused power outlets were not safely covered n=134(82.7%,95%CI76.9-88.5), only a few caregivers were careful about the direction of hot pot handles n=47(29%,95%CI22.0-35.9) and 19 caregivers n=19(11.7%,95%CI6.7-16.6) found be living in a house with an unsafe electricity distribution box. Measures practiced as first aid were incorrect in the majority. n=129(79.6%,95%CI73.5-85.8).

Conclusion : Home safety measures in prevention of accidental burns were practiced by majority however, most of them practiced harmful methods as first aids. This stu identified the gaps of practiced first aid measures and home safety measures that will benefit in implementing future community health care preventive programs.

Keywords: Accidents, Burns, First aid, Children

0070.Mohottala, L.K.A.

Practices on usage of safe water and safety assessment of common water sources in the Malhewa GV division, Bibile, Monaragala district.

Postgraduate Diploma Health Sector Disaster Management – 2020 SC 128

Medical Officer of Health (MOH) area Bibile, is situated in Badulla district, Sri Lanka. This MOH area uses different types of water sources which contribute to several water projects. Majority are supplied by small water projects where quality of supplied water is different from each other. Some water sources have repeatedly been found positive for E.coli and Coliforms. Bibile MOH area consists of 4 PHI areas. Out of them, Malhewa and Yalkumbura PHI areas reported polluted water sources repeatedly. The objective of the study was to describe the practices on usage of safe water and the level of microbiological safety of water sources in the Malhewa GN division.

This was a Community based cross sectional descriptive study. Malhewa GN division is an area with a population of 1214 which consist of 446 families with 294 households. Of them, 204 houses are supplied water by a single project, others use well water and water from small water streams (MOH, Bibile, 2015). Adult population age more than 18 years who are resident of Malhewa GN division for more than 6 months chosen for the study. New residents who came after 2015 census of population and housing were excluded. Sample size required for the

survey to detect 50% good practices with 5% confidence level in an infinite sample of 294 households was 167. However, 220 people from the population participated to the study. Data collection was done by a pretested interviewer administered questionnaire.

Majority (55.9%) of the participants were GCE O/L. (General Certificate Exam Ordinary Level) not qualified, so the researcher gave the questionnaire to the most educated person in a family. Percentage of the study participants who use a common well for drinking and cooking was 59.6%. Samples were collected from 11 of these main wells. Although 105(47.1%) of the participants used a common well for bathing and other use, majority (52.9%) of participants used collected rain water(14.8%) and chlorinated village water projects. Majority (58.7%) answered as they boiled their water before use, but only 89 participants out of 131(67.9%) always boiled their water before use. This showed a practice of raw water usage. Satisfactory level of participants stored their water in closed containers. Practices vary regarding storage of water. Nevertheless, satisfactory amount of participants cleaned their storage containers. Regarding transportation of water, majority received water through a pipe line. Significant amount (30.0%) of participants transport water in open containers, which can cause contamination. From participated families, 82.1% took treatment from a government hospital. In a self-reported practice of washing hands before meals and after toilet use, was satisfactory. Although 111(50.5%) washed hands with soap, many participants 74(33.6%) practices regarding handling childrens' stools was not satisfactory.

According to distribution of households and population by type of toilet/latrine facilities, according to residence, (Sri Lanka, 2006-07) improved, not shared facility 84.7%. But almost all of this study area used water sealed latrines. All analysed common water sources were microbiologically unsuitable as drinking water in the Malhewa GN area. To ensure safety of drinking water measures should be taken place to treat common water sources. Educational and awareness programs should be taken place to encourage the use of boiled water and proper storage. Also, educational programs regarding hand washing after handling children's stools were a necessity.

0071. Priyadarshani, K.T.D.

Descriptive study on risk factors , health response, morbidity and outcome of Motor-cyclist road traffic accidents admitted to Teaching Hospital Kandy Postgraduate Diploma in Health Sector Disaster Management – 2018

D 4873

Introduction : Deaths due to trauma in Sri Lanka is in rising trend, where road traffic accidents is a major contributing cause of injuries and premature deaths. Road Traffic accidents had killed 2816 in 2015. Motorcycles are an important and popular means of transport in developing countries. Thus, motorcyclists are more vulnerable to trauma compared with other vehicles, due to inherent structural features to gain agility at the expense of safety.

Objectives: Objective was to assess the characteristics of risk factors, health response and morbidity and outcome of motor-cyclist road traffic accident victims admitted to Teaching hospital Kandy.

Methods : A cross sectional descriptive study was carried out in Teaching hospital-Kandy including motorcyclist road traffic accident victims admitted from August 2018 to December 2018. Consecutive sample of 202 patients was achieved from all direct and transfer admissions. Data was collected using pretested interviewer administered questionnaire. Ethical clearance was obtained from Ethics review committee- Teaching Hospital-Kandy. Statistical analysis was done using SPSS version 20. Frequency distributions and percentages were computed for all the variables.

Results : Findings of the study showed that motorcyclists had mean age of 30 ± 11 years. Male to female ratio was 10.2:1. Median monthly income was 30,000 Rs (IQR 16875-45000 Rs). These accidents were caused by Collision of motorcycle to vehicle 50% (n=101), motorcycle to pedestrian 7.4% (n=15), motorcycle to road structures or slipped on the road 34.5% (n=69). Mean speed was 39 ± 16 km/h. The commonest motorcycle was scooter type (16.3%). Most of the accidents had occurred in first 10 years following production of motorcycle (79.7%) and 56.9% were serviced within one month. Road was adequately visible for 64.9% of motorcyclists, 66.8% occurred in dry weather condition and 80.7% on carpeted roads. Seven-point four percent motorcyclists did not possess driving license. Majority had worn helmet at time of accident (94.1%). 74.2% motorcyclists had accessed to medical care within first 30 minutes. There was no statistically

significant association between license duration and injury severity score (<0.05 , 0.914). Among motorcyclists 44.1% had a disability at discharge requiring lag period to reach pre-accident functional level.

Conclusions and Recommendations: Majority of the motorcyclists are young, male and belongs to middle income category. Though a satisfactory compliance with traffic rules were noted, still a gap of knowledge and application exist which require morea tailor-made prevention strategies. The severity of the injuries did not show association with the driving experience the motorcyclist had.

Keywords: Road Traffic Accident, Motorcyclist, Risk factors, Injuries, Morbidity

0072.Rathnasinghe, J.A.C.

Knowledge, attitudes and practices on motorcycle safety among Public Health Inspectors in Kurunegala RDHS s
Postgraduate Diploma in Health Sector Disaster Management – 2018
D 4870

The majority of casualties of road traffic accidents were motorcyclists with head injury involved in almost all deaths.

Underlying causes of motorcycle accidents were found out to be inattentive mode, driving under stress, poor attention to distances, poor attention towards regulations, unfamiliarity with the road of the accident and absence of protection systems.

A descriptive cross-sectional study was conducted among all Public health inspectors attached to regional directorate of health services (RDHS) Kurunegala, to assess their knowledge, attitudes on motorcycle riding safety and the practices related to safety. Being role models related to public health, being frequent motorcycle riders, being riders throughout the urban, suburban and rural roads are among the factors favourable for the selection of the population of Public Health inspectors attached to Kurunegala RDHS division.

Majority of the responders had the knowledge of the presence of safety measures in the motorcycles they used. A minority of responders (11%) had no knowledge on presence or absence of integrated brake systems and 22% had no knowledge on presence or absence of anti-lock brake systems which were rare safety measures. Most of the respondents (88%) were aware that road traffic accidents is a public health issue.

Safety measures available in respondents' motor bicycles were found to be average. Air bags and antilock brake systems were not available in any of the motor bicycles according to the respondents' knowledge while 5% of the respondents reported the presence of crash bars.

A majority of the respondents (76%) reported to have answered the mobile phone or used the mobile phone while riding at least 2-3 times a month. Another significant proportion (82%) of the respondents reported to have overtaken other vehicles from left side more than 2-3 times a month. A majority of respondents reported to have ridden motorcycles at least 2-3 times a month or more frequently (76%) while tired. Only 30% of the respondents used the helmets always.

Out of the population surveyed 41% of the respondents reported to have been involved with a road traffic accident that led to vehicle damage and or physical injury to the driver/passenger/bystander.

A majority of the respondents (72%) agreed that there should be strict punishment for offenders in road traffic accidents. A significant majority (80%) of the respondents agreed that exceeding speed limits are not acceptable in an urgency.

Keywords : Knowledge, Attitudes, Practices, Motorcycle safety, Public health inspectors

0073.Sarvaanathan, S.

Knowledge, attitude and practices on effects of excessive exposure to sun and increased ambient temperature among secondary school teachers of Velanai and Kayts MOH areas.

Postgraduate Diploma in Health Sector Disaster Management – 2019

D 4876

Introduction: Excessive exposure to sun is a common hazard that school children and teachers face in their routine day to day life. Teachers and students do a lot of outdoor activities, athletic and sport practices in open play grounds exposing them to hot sun. Excessive exposure to direct sun can cause increase in the core temperature of the body and lead to severe dehydration, heat exhaustion, heat stroke (sun stroke), heat cramps and skin burn. Several studies are done on the knowledge, attitude and practices of general public on exposure to sun and its effects worldwide, but less information is available on research among school teachers and students in Sri Lanka.

Objective : The current study is aimed to assess the knowledge, attitude and practices on excessive exposure to sun among secondary school teachers of Velanai and Kayts MOH areas, which are in dry climatic zones of Sri Lanka.

Materials and Methods : This descriptive cross-sectional study was carried out in the study period of May 2016 to December 2016 among secondary school teachers from 31 schools in the islands of Northern Province. Self-administered questionnaire in the local language and English distributed among them to answer; and the responses were analysed statistically. The questionnaire comprised of 24 questions has 4 sets of questions namely on socio-demography, knowledge, attitude and practices. The information sheet which was English and local language of Tamil contains details about the research and the principal investigator; and written informed consent obtained.

Results : The specially designed self-administered questionnaires were distributed among 290 secondary school teachers, and 222 questionnaires were completed, returned and included in the analysis corresponding to 76.6% of response rate. Among the participants included almost equal gender distribution noted; and the male population showed better awareness in identifying heat stroke as a medical emergency. Educational levels of participants seen from GCE ordinary level up to Post graduate level and above. It is observed that teachers with university education are knowledgeable enough to recognize heat stroke as medical emergency, than other groups. Only little above half of the participant's KAP was adequate on the topic. A significant portion of participants have poor knowledge, attitude and practices on effects of excessive exposure to sun and increased ambient temperature.

Conclusions and Recommendations:

Overall prevalence of ignorance, poor sun safe practices and negative attitudes were noted among teachers from the study.

School teachers of Velanai and Kayts MOH areas, need education on identifying sunstroke as a medical emergency, irrespective of their educational level or gender.

School teachers of Velanai and Kayts MOH areas need to be trained in giving first aid and identifying heat related illnesses irrespective of their educational level or gender.

Creating better awareness on morbidity and mortality secondary to excessive exposure to sun may help in improving the attitude towards the hazard.

0074.Sendanayaka, S.N.

Knowledge, attitude and preparedness of Public Health Inspectors in Kalutara RDHS area for an “ outbreak of Influenza”

Postgraduate Diploma in Health Sector Disaster Management – 2018

D4865

Introduction : Influenza is identified as a highly contagious respiratory infection and due to its rapid transmission, the disease leave little time to implement mitigation measures, demanding overwhelming medical facilities for care. Recent Influenza outbreaks in Sri Lanka occurred among both poultry and human beings posing a continuous threat of infection to both humans and poultry.

Public Health Inspectors are the grass root level health care workers responsible in providing public health services regarding prevention and control of communicable diseases including Influenza.

The scope of this study is to assess the knowledge, attitudes and preparedness of Public Health Inspectors in Kalutara RDHS area to prevent and control an “outbreak of Influenza”.

Methods: This study was a cross sectional study and a self-administered questionnaire was used for data collection.

Results: The study revealed that 62.7% of the Public Health Inspectors in this study possessed an adequate overall knowledge on Influenza. Majority (85.1%) of the participants were having positive attitudes towards prevention and control of an outbreak of Influenza which was not significantly associated with period of service or on past experience in working in an outbreak of Influenza. Only 14.9 % of Public Health Inspectors possessed an adequate preparedness level for an impending outbreak of Influenza.

Conclusions & Recommendations: Gaps were identified in existing knowledge, attitude and preparedness of Public Health Inspectors on prevention and control of an outbreak of Influenza. Training programmes to upgrade knowledge, attitudes and preparedness should be carried out in future.

Keywords : Public Health Inspectors, Outbreak of Influenza, Regional Director of Health Services

0075. Wickramasinghe , E.A.N.D.

Knowledge about management of change system and its application to avoid safety incidents in process plants in Horana industrial zone.

Postgraduate Diploma in Health Sector Disaster Management – 2018

D 4871

Introduction: Occupational health and safety is still an under researched in the public health landscape. In Sri Lanka with the recent industrial developments, this area is becoming increasingly important. To prevent and minimize occupational health related safety issues establishment of Management of Change System is important. The aim of this study was to assess the knowledge, level of practice of Management of Change System and the personal roles and responsibilities of the workers.

Methodology: A cross-sectional study was carried out among 256 management and major staff in Horana Board of Investment. A pre-tested self-administered questionnaire was used to collect data for the study. A descriptive statistical analysis was done and the results were presented according to the stipulated objectives.

Results: The response rate was 77% (n=197) out of the 197 total population 27.42% (n=54) were between the age group of 30-35 years and nearly 64.87% (n= 129) were males. Majority were Sinhalese with 57.87% (n=114) from the total population. Nearly 50% (n=97) were having a degree and where 21.35% (n=42) from the sample were Safety, health and environmental professionals. Another 51.27% (n=101) were already established an occupational safety policy however, about 64% (n=126) were not communicated the policy to the overall organization. Majority of the study participants (53.8%, n= 105) were identified the all legal requirements in their industries but very few had complied with all the requirements. About 37.56% (n=74) had complied another 36.5% (n=73) were not complied and nearly 26% (n=50) stated that they were not aware. From the total study participants 40.6% (n=80) were conducted and documented the risk assessment (last year) and nearly 67% (n=132) had defined action plan after their risk assessment. Furthermore, majority of the participants (75%, n=148) have identified the risk assessment as a useful process in prevention occupational hazards. The practice of Lock Out, Tag Out system and the practice of Management of Change System at the site were still not adapted by many participants. However, practice of Key Performance Indicators was already

established and 58.8% (n=15) responded correctly to this. The knowledge about risk assessment (95.2%, n=40) and legal requirements (76.8%, n=33) among the Safety, Health and Environmental professionals was statistically significantly higher ($p < 0.05$). Number of incidents occurrence were lower (1.8%, n=2) where participants with good knowledge of practice of Management of Change ($p < 0.05$).

Conclusion: Majority of the participants in this study were in a view that Management of Change System is a process where they have to implement to have a safer working environment. However, practical applications and practice of participants with regards to Management of Change system is still poor. Frequent trainings of Management of Change System among management and major staff workers will benefits industries further.

Medical Administration

0076.Abhayaratne, A.J.

Assessment of biosafety precautions at laboratories in selected government healthcare institutions in Colombo district.

MSc. Medical Administration - 2018

D 4856

Background: Sri Lanka signed the Cartagena Protocol on Biosafety when it was first open to signatories in May 24, 2000. Laboratory services are an essential part of the entire health system and biosafety prevents unintentional exposure to pathogens and toxin. Laboratory staff are at high risk for infection due to direct contact with potential infectious agents and bio toxic material.

Objectives: To assess the biosafety precautions at laboratories and knowledge, attitudes practices among medical laboratory technicians on biosafety precautions (BSP) in selected government healthcare institutions in Colombo district Sri Lanka.

Methods: A descriptive cross-sectional study was performed in selected government healthcare institutions in Colombo district Sri Lanka. The availability of BSP was assessed through a checklist based on direct observation. Knowledge, attitudes and practices among medical laboratory technicians (MLTs) (n=315) on Biosafety precautions was assessed using a pretested self-administered questionnaire.

Key areas of assessing the Knowledge comprised of basic knowledge on biosafety, biosafety level of working laboratory, aerosol formation, cleaning up spills, disease transmission, international color code of waste management and basic essentials requirements in laboratories to achieve biosafety. There are nine attitudinal questions to cover the attitudes related to BSP. Practices were assessed to ensure the level of adherence to BSP using clinical vignette.

Results: MRI can be considered as having good standard in BSP (Cumulative score 89.26%). BSP were poor in DMH (43.16%), IDH (43.76%), JAPR (46.29%), BHH (49.42%) and LRH (49.52%), respectively. Lowest score had been obtained by CSTH (35.57%).

Majority of MLTs had excellent knowledge (97.3% n=257), favorable attitude (90% n=210) and satisfactory level of practices (90.3% n=250) on BSP.

Satisfactory knowledge on BSP is significantly high in MLTs with less than 20 years' experience ($P=0.02$). Unfavorable attitude were positively associated with MLTs over 40 years of age ($P=0.01$). Unsatisfactory level of practices of MLTs are significantly associated with age more than 40 years. ($P=0.04$) and the staff with no post graduate qualifications ($P=0.04$).

Conclusions: MRI is the only institution which showed good level of BSP (82.26%). The level of BSP in Colombo district was 52.8% showing urgent need of an intervention. 6 out of 14 institutions showed very poor level of BSP. The knowledge level on BSP reduced with advancing the service experience. Attitudes among workers depreciated with aging. The level of practices became poor on aging and not qualifying with post-graduation.

Recommendations: Establishment of biosafety committee, preparing standard operational practices (SOPs), and introduction of continuous professional development and surveillance system have been identified as a major recommendation for proper establishment of BSP.

Keywords : Bio risk, Biosecurity, Biosafety, Knowledge , Attitudes, Practices, standard, Safety, Laboratory and Biosafety precautions.

0077. Bandara, R.A.M.W.S.

Assessment of inter hospital patient transfer process from primary health care institutions to secondary health care Institutions.

MSc. Medical Administration – 2019

SC 0131

Inter-hospital patient transfer is an important aspect of patient care that provide the facilities and services needed, yet not available at the facility while ensuring the continuation of care. Though carried out with good intention of improving the patient care, the process carries its own risks and adverse effects.

The study was carried out to assess the inter-hospital transfer process from the primary health care to the secondary health care institutions and to learn the transferred patient profile, reasons and the timeline of the transferred. The study was a descriptive study carried out on the patients transferred from the primary health care institutions to the DGH, Embilipitiya.

The study revealed that the majority of the transfers are males and are from the Grade A divisional hospitals. There is a rise in the number of patients transferred on the Fridays and Saturdays. It was also revealed that the majority of the transfers are urgent in nature. Majority of the transfers are due to medical causes while the next highest reason is surgical in nature. Transfers to the medical wards are mainly by females while the majority of the surgical causes are of males. An interesting finding was that a considerable number of transfer forms were without adequate details and even without the consent for the transfer. It was also found that some of the transferred patients required minimal intervention or opinion from the consultant.

Keywords : Inter hospital patient transfer, Primary health care, Patient Transfer Process, Reasons for patient transfer

0078.Fernando, K.P.C.

Assessment of the status in patient safety culture at hospitals of Sri Lanka Air Force.

MSc. Medical Administration – 2019

SC 0139

Introduction : WHO defines Patient Safety as “prevention of errors and adverse effects to patients associated with Healthcare”(WHO, 2018). Patient safety has been identified as one of the major concerns in the present day health services affecting the quality of care as well as increasing the burden on health budgets. Being a High Reliability Occupation (HRO), the importance of improving patient

safety of hospital of the SLAP is of paramount importance. Post studies conducted on Patient safety in Sri Lanka highlighted that the Hospitals lagged behind in teamwork, communication and event reporting (M Amarapathy March 2013).

Objectives : The general objective of this study was to describe the existing status of patient safety culture at hospitals of the Sri Lanka Air Force.

Methodology : This was a “Descriptive Cross-sectional Study” carried out at the four hospitals of the SLAP located at Colombo , Katunayaka, Ratmalana and Chinabay Study sample was 157 doctors , Nursing Officers and other health staff. The study instrument was a validated self-administered questionnaire developed by the Agency of Healthcare Research and Quality (AHRQ), US Department of Health, which was amended by the researcher to meet the requirements.

Results : The overall response rate of the study was 97.5. Approximately 73.1 percent of the staff stated, they work more than 60 hours per week. organizational learning was identified at 77,1 percent while 54.2 percent of the respondents stated that they had to sacrifice patient safety to do more work (ANOVA, Sig= 0.154) With regard to event reporting the overall positive composite was approximately 44.4 percent.

Managerial commitment towards patient safety revealed an overall composite positive response of 69.9 percent. Further analysis of the staffing related factors revealed an overall positive composite score of approximately 43.6 percent with the adequacy of staff being 26.6 percent. The positive composite on non-punitive response to errors was revealed at 27.3 percent (ANOVA, Sig= 0.000) , while approximately 82.8 percent of the respondents stated that there would be adverse impacts on then careers if patient safety incidents occurred and reported (Sig = 0.000).

Positive composite score for knowledge on prevention of HAIs and practices of hand hygiene was 62.4 percent and 82.4 percent respectively. Approximately 64.3 percent of the respondents felt the improper positioning of hand robs and wash basins was a barriers to hand washing.

Discussion and Recommendation: The available medical staff at the four SLAF hospitals was found to be inadequate which has resulted in significantly high workload.

Since increased workload has been identified as a risk factor for human errors, it is recommended to increase the staff of the hospitals and to arrange duty rosters appropriately. The researcher recommends hospital management to take necessary steps to develop a more open and cordial work climate, as well as to eliminate the fear of medical staff regarding punitive errors, in order to develop an open and just culture within the hospitals. It is recommended to place hand rubs and wash basins at comment locations.

Keywords: Patient Safety, High Reliability Organization, Sri Lanka Air Force, Teamwork, Communication, Hospital Acquired Infection

0079.Fernando, W.S.A.

Knowledge and attitudes towards long term care services for elderly among nurses in Base Hospitals of regional director of health services. Gampaha. MSc. Medical Administration – 2019 SC 0195

There is tremendous increase in the elderly population globally. Sri Lanka is one of the countries facing a rapidly ageing population transition. Associated chronic illnesses, decreasing physical functionality and increase in dependency are the results of ageing phenomenon. Therefore caring elderly is one of the global health challenges faced by the countries worldwide.

Long-term care of elderly (Geriatric step down care) is identified under elderly care as one of main component to be concerned and developed in Sri Lanka. The nurses are the one of key professional staffs caring elderly round the clock. In order to render optimum Long-term care services for elders, nurses need to be well equipped with adequate knowledge and right attitudes.

The objective of this research study is to understand knowledge and attitudes towards the long-term care services for elderly among nurses' in Base Hospitals of the Regional Director of Health Services Gampaha.

A descriptive cross sectional study was carried with self administered questionnaire in this research study. Total number of 423 nurses in Base Hospital of Gampaha RDHS were enrolled in the research study.

As trained healthcare providers the ideal value for mean knowledge score of nurses on elderly care should be 100%. However, the current value of mean knowledge score of nurses in Base Hospitals in RDHS Gamapaha was 69%, which was not a favourable value for a knowledge score and 0% of the participants were able to provide correct answers for all 24 questions regarding the knowledge.

Mean attitude score of nurses with regard to long-term care services for elders was 74% with 0% were able to provide correct answers for all 15 questions on that identified main 3 training needs of the participants were correct knowledge on aging and long-term elderly care, counselling for elders (psychology), and knowledge on modern equipment needed for effective elderly care.

The results of this study about nurse's knowledge and attitudes towards long term care service for elderly similar with other international studies.

This research study was the first reported study undertaken in Sri Lanka related to nurses knowledge and attitudes towards long-term care of elderly. Therefore this study will offer an insight into new research studies on long term care services for elderly.

0080 .Hewamanna, S.S.K.

Performance of public health midwives of the medical officer of health areas in Nuwara Eliya district.

MSc. Medical Administration – 2018

D 4861

Introduction: Public Health Midwives play a major role to maintain a sustainable and successful health care service in the country. In detail analysis of their performances is a timely need.

Objective : To assess the performance of Public Health Midwives of the Medical Officer of areas in Nuwara Eliya district.

Methods : A descriptive cross sectional study associated with a qualitative component was conducted among 264 Public Health Midwives in Nuwara Eliya district. By using a validated self-administered questionnaire task performance, contextual work performance and counterproductive work behaviour of Public Health Midwives were analysed. Service delivery of the PHMs were assessed by using the data of H 524 and H 527 forms which were collected through a structured data extraction sheet. In addition to that a Focus Group Discussion was held with all the MOHs of the district and three Key Informant Interviews were conducted with the district supervising officers. All numerical data were analysed by using Statistical Package for Social Sciences version 23.0 and qualitative information were rationally and methodically described. Ethical clearance was obtained from the Ethics Review Committee, Postgraduate Institute of Medicine.

Results : Age of the study participants ranged from 26 years to 63 years (mean=39.23 years: SD=9.74 years). Majority were Sinhalese (78.5%) and married (87.9%) participants. Midwives task performances and counterproductive

work behaviours positively correlated with their age ($r = .073; p = .234$ & $r = .085; p = .167$) and service duration ($r = .095; p = .122$ & $r = .099; p = .108$). Contextual performances of the participants showed a negative association with their age ($r = -.08; p = .197$) and service duration ($r = .068; p = .275$). Child health care coverage of the PHMs who had undergone supervisions showed a significantly higher value ($t = 3.01; p = 0.003$). A significantly higher maternal health coverage was observed in the group with an allocated scooter ($t = 2.67; p = 0.008$), with less than 3000 covering population ($t = 3.742; p < 0.001$) and who work in the government sector ($t = 4.674; p < 0.001$).

Conclusions and Recommendations: Higher majority of Public Health Midwives demonstrate excellent level work performances. Individual work performances were observed to be raised with increased age and service duration. When the availability and accessibility of PHMs are increased, significantly higher performances were observed.

To achieve excellent performances availability and accessibility of PHMs Should be increased. System strengthening and taking flexible administrative decisions should be considered for each PHM area.

To gain more satisfactory performances supervisions, periodical reviews and capacity building activities should be improved.

Keywords: Midwife, Nuwara Eliya, Performance W.S.H.

0081. Jayakody, J.A.P.

Project to improve the clinical waste management processes and practices in Base Hospitals of the regional directorate of health services Gampaha.

MD Medical Administration – 2020

SC 203

This was an interventional research project carried out to improve clinical waste management (CWM) processes and practices in all the Base Hospitals in the Regional Director of Health Services Gampaha. Interventions were implemented to develop the clinical waste management processes and practices in the health care institutions according to the Health Care Waste Management Guidelines published by WHO, 2014.

Aim of this study was to identify the present gaps in the CWM processes and practices in all the Base Hospitals in the RDHS Gampaha compared to the

standard practices recommended by WHO, 2014, designing a package of appropriate interventions to overcome the gaps and to evaluate the progress of the project three months after implementation.

Both qualitative and quantitative approaches, focus group discussions, checklists and employee's survey was used to assess the processes and practices of CWM. Qualitative techniques were used mainly for gap identification and designing the interventions. Quantitative methods were used to assess the effectiveness of the improvements. Total quality improvement method was designed with extensive literature review, consulting the experts in the field and relevant stakeholders. Qualitative findings confirmed that there were many gaps in the segregation, collection, and storing, external transportation and treatment processes of CWM. Lack of the knowledge among Nursing Officers (NOs) and Junior Health Staff (JHS), poor segregation, inadequate Personal Protective Equipment (PPE) usage, substandard clinical waste (CWs) stores, incineration of general waste and poor supervision by operational managers were identified as the main gaps in the system.

Interventions consisted of developing CWM guidelines introducing an internal circular in the RDHS Division, improving knowledge on CWM among NOs and JHS, making PPEs available, developing the conditions of CWs stores, and increasing the frequency of collecting CWs and optimizing the treatment process in BH Wathupitiwala. In addition to that, a CWM tool was introduced to increase the overall supervision of the CWM performances.

The knowledge among the Nursing Officers (NO) and Junior Health Staff (JHS) on CWM had improved significantly according to the Wilcoxon signed ranks test, where the mean of the scores received for SAQ was 3.4 before and increased to 9.6 after the intervention. It was found that previously Base Hospital Wathupitiwala incurred Rs: 8618.15 /day to treat HCWs which came down to Rs 4514.70/per day after the intervention. Before the intervention HCWs, 581.41kg/day was treated, even though it was reduced to 158.38kg/day following the intervention. Hospital managers, NOs and JHS revealed that the system had achieved significant improvements and now the system is safer for the employees, environmentally friendly and economical than the previous practices.

Package of interventions designed with the stakeholders helped to increase adherence of CWM practices and processes up to the standard recommended by

WHO and enhanced the patient and employee safety. CWM tool made a positive difference in the daily supervision of CWM practices, standard CWs stores and regulated incinerating practices made the treatment process more economical and environmentally friendly. Conducting training programmes on HCWM for NOs and JHSs, availability of continuous logistics like PPEs, waste bins, waste carts and establishing standard CWs stores to prevent possible environmental pollutions through continuous supervision and monitoring was recommended.

0082.Jayakody, J.A.P.

**Project to improve the readiness for sharing information in Teaching Hospital Ragama, according to the right to information (RTI) ACT, No.12 of 2016.
MD Medical Administration – 2020 SC 0204**

This project was carried out to increase the readiness of sharing information in the Teaching Hospital Ragama according to the RTI act 2016. Right to information (RTI) refers to the right of every citizen to access information held by or under the control of public authorities. Patients have a right to know how the healthcare delivery mechanism is taking place at their institutions. Access to information not only promotes transparency and accountability in management but also facilitates fully participation of public life to promote good governance in the country at large. Therefore, the customer should be accessible to healthcare-related information to understand that they are getting the right treatment at the right time from the right person. Ultimately customers to know the system is responsive, transparent and accountable they must be accessible for essential information appropriately. If the customer's right to information is protected, every organization should be ready to share information according to the RTI Act 2016.

Aim of this project was to identify the current practices and gaps in sharing information according to the RTI Act and designing an intervention to overcome the gap and increase the readiness for sharing information leading to foster the culture of responsiveness, transparency and accountability in the TH Ragama.

Both qualitative and quantitative approach was used to assess the process before and after the intervention. Stakeholder engagement, information request process, appeal process, institutional capacities and enforcement & monitoring were the strategic areas used to improve the readiness by using the Customer Relationship Management (CRM) model. CRM increased the readiness in the organization, human resource and technical aspects.

Readiness score was calculated to assess the improvement of the organization. Knowledge of sharing information among selected employees was assessed. According to the findings, it was noticed that there is a significant increment in knowledge. MannWhitney U test was used to assess the significant level. The satisfaction of employee regard to the process of sharing information according to the RTI act 2016, had improved drastically. Organizational readiness for sharing information was assessed by calculating the readiness score which was 7.7% and three months after the implementation of the intervention it had developed up to 89.2 %. The main gap identified in the project was that the organization was not ready to share information even after two years of the execution of the RTI act. Package of interventions introduced was improving the stakeholder engagement, enabling information request and appeal process, developing institutional capacities, enforcement & monitoring. Project evaluation has shown significant improvement in the organizational readiness for sharing information and ultimately increasing the transparency, accountability and responsiveness of the organization.

0083.Jayalath, M.P.

Evaluation of safety climate and its associated factors in Base Hospital Avissawella.

MSc. Medical Administration – 2018

D 4862

Introduction: The safety climate is “the summary of molar perceptions that employees share about their work environments” and it is associated with several factors. Hospital safety climate can be summarized in six factors namely management support for safety programs, absence of hindrances to safe work practices, availability of personal protective and engineering control equipment, minimal conflict and good communication among staff members, frequent feedback and training by supervisors and cleanliness and orderliness of the work site.

Objectives: The study objective was to evaluate the safety climate and its associated factors in Base Hospital Avissawella.

Methodology : A descriptive cross-sectional study was done from October 2017 to September 2018 among a sample of medical officers (n= 109) and nursing officers (n=193) selected from simple random sampling. A structured, pre-tested, self-administered questionnaire was used for data collection.

Results: Among the six safety climate dimensions personal protective and engineering control equipment availability (mean=3.94, SD=0.67) was perceived at the highest level. The lowest scored perceptual dimension was absence of job hindrances (mean=3.27, SD=0.83).

Among the respondents 219 (83.5%) had at least one exposure incident during the study period. There is no significant relationship between job category and workplace exposure incidents ($p=0.388$). Only 28.3% ($n=62$) had reported about their injuries.

Only 60.7% ($n=159$) were strictly compliant to safe work practices and the compliance of nursing officers was better than of medical officers ($p=0.000$). The safety climate had a negative association with workplace exposure incidents ($OR < 1.0$) and a positive association with compliance to safe work practices. ($OR > 1.0$).

Conclusion and Recommendations: The respondents had negative perceptions about some of the safety climate dimensions. Workplace exposure incidents were common and the reporting behavior about injuries was poor among both categories of staff, but comparatively the nursing officers were better majority were “Strict compliant” to the safe work practices and compliance was better among nursing officers. Safety climate was negatively associated with exposure incidents and positively with the compliance.

The hospital managers should pay more attention on safety of employees, provide adequate training opportunities on occupational safety and encouraged employees’ reporting behavior.

Keywords: Safety climate, Workplace exposure incidents, Safe work practices

0084. Karunarathna, A.D.U.

Evaluation of an intervention to improve health seeking behaviours of people in Kakanadura medical officer of health area.

MD Medical Administration – 2020

SC 0173

Introduction: Disease burden due to chronic Non-Communicable Disease are significantly increasing in all over the world and the situation in Sri Lanka also showed a similar pattern. Therefore, the concept of Healthy Lifestyle Centers (HLCs) was introduced to increase screening and treatment of common NCDs

to mitigate this problem in Sri Lanka. Even though the screening facilities were established at close proximity to the people, the utilization of these facilities were not satisfactory enough to meet national targets during last few years in Sri Lanka.

Objectives: The study was conducted to develop and validate a tool to assess the health seeking behaviour, describe the health seeking behavior for selected Non-Communicable Diseases and to design, delivery and evaluate the effectiveness of the intervention to improve health seeking behavior for selected non-communicable diseases of peoples (Age group of more than 18 years old) living in Medical Officer of Health Area, Kakanadura.

Methodology: The study was conducted in Kakanadura Medical officer of Health area in Matara District in Sri Lanka. It had four components, and the development and validation of the tool to assess Health seeking Behaviour was the first component. The secondary literature reviews and key informant interviews were conducted accordingly and the Qualitative study methods of Thematic Analysis were used to identify the 13 domains. The “Health Belief Model” was identified as the basis to assess HSB in the process and items in each domain were established using Modified Delphi Technique via Key informant interviews. The face validity, Content validity and Consensual Validity was ensured and reliability of the tool were established by test retest reliability.

The second component of the study was the descriptive cross-sectional study using the developed tool as an interviewer-administered questionnaire using six research assistants of training Midwife students to assess the Health Seeking Behavior among 850 individuals in selected 18 GND in the study area over a period of 6 weeks in September and October 2019. Subsequently, development of interventions was done according to the important results of descriptive study focus group discussions with relevant stakeholders.

Two type of interventions were designed, namely community base interventions through health and non-health groups to improve awareness and practices of health seeking behaviour and health system base interventions were conducted to improve system related issues discovered in the component two and Focus group discussions.

Finally. Evaluation of the effectiveness of interventions were conducted as the fourth component. The process evaluation was achieved by with completion of

programmes according to the target and outcome evaluation was established through a community trial using the Akuressa Medical officer area as the control and improvement of HLC attendance by system data.

Results : Mean age of study population was 43.14 years with SD of 10.17 and proportion of females were 75.4 %. Majority of them passed O/L (42.0%) and not employed (74.3%). Among all, 114 (13,6%) reported that they had at least one NCD and 406 (48.4%) reported that they had a close family member at least having one NCD.

Among the study population only 46.5% (n =390) were aware of HLC's and only 25.8% (n=216) knew about the difference between the hospital which you take usual treatment and the HLC. Only 30.1% (n=252) of participants were ever visited an HLC and Out of those only 40.2% (n=102) mentioned that they were satisfied with the service rendered. Mean distance to the nearest HLC from home was 4.41 km (SD = 4.87).

The data of most preferred method of acquiring knowledge on health and diseases (97.4%, n = 816) and the most trusted method of acquiring knowledge on health and diseases (95.0%, n = 796) were both from government and private (including family practice) sector Medical practitioners.

Assessment of perceptions using "Health Belief Model" revealed that, majority of the people were not thinking NCDs as serious diseases and not susceptible to get NCDs. Although they perceived no barriers and knew the benefits of screening, they are not motivated for screening or to do regular exercises.

Additionally, focus group discussions with Mothers' Support Groups, group of Male participants and Field health staff revealed that, lack of awareness on NCD, personal factors (lack of time, busy schedules, economic factors) and service-related factors (poor access, poor responsiveness, communication, lack of cholesterol testing facility) as the main reasons for poor attendance to screening. Accordingly, interventions were planned to improve awareness through health promotion interventions using social marketing strategies designed based on Sri Lanka Diabetes Risk Score (SLDRISK) at community level among people using health staff, volunteers and through inter-sectoral coordination. Additionally, service-related factors were improved with conducting outreach programs, provision of cholesterol testing facilities and through quality improvements initiatives and infrastructure developments of HLCs.

Post evaluation of process and outcome indicators revealed. The statistically significant improvements of the knowledge, attitudes and practices of health seeking behaviour of people in the study area was noted while behavioral change to modify selected risk factors following health promotion interventions in the study area was not significantly improved except for the increase in practice of physical exercises. At the same time, HLC coverage of MOH area Kakanadura (Study area) was increased significantly than MOH area Akuressa (control area).

Conclusion : The designed questionnaire (HSB tool) to measure the health seeking behaviour of the population was a valid and reliable tool to describe the health seeking behaviour in community. Health promotion interventions based on results of descriptive study and focus group discussions with stake holders at community level and system improvements has clearly increased the knowledge, attitudes and practices of health seeking behaviour of people in the study area. At the same time, HLC coverage of MOH area Kakanadura (Study area) was increased significantly than MOH area Akuressa (control area).

Keywords : Health seeking behavior, Non communicable diseases, Intervention

0085.Kayalvili, B.

The Influence of five ‘S’ and kaizen system on job satisfaction and attitude changes in selected government hospitals in Eastern province
MSc. Medical Administration – 2016 **D 4859**

Quality management is the way that enables to manage the external and internal challenges by utilizing the available talents. Five ‘S’ - Kaizen- Total Quality Management system improves quality, safety and work environment. They focus on customer and employee satisfaction and develops positive attitude of staff towards quality healthcare services. Healthcare employee job satisfaction and positive attitude are particularly more important to provide quality services in any government hospital, where patients have a long- term relationship with staff, however, no attempt has been made to find out how five ‘ S’ and Kaizen practice influences on job satisfaction and attitude of health employees in Sri Lanka. For this reason, priority for the study could be justified. Likewise, socio- demographic factors such as age, staff category, service period in the hospital too, play an important role in determining job satisfaction of a healthcare employee.

This was a hospital- based descriptive, cross sectional study carried out in selected two District General Hospitals (DGH) in Eastern Province. DGH Ampara where five 'S' and kaizen practices has been implemented for long period of time. DGH Trincomalee where five 'S' and Kaizen practice has been just started. The main study unit was a Medical Doctor, a Nursing of category staff, a staff of professions supplementary to Medicine category or a Minor category of staff of the two selected hospitals in the Eastern Province. A sample of 422 employees selected from each hospital. The data was collected using a self- administered questionnaire. It was developed by using literature guidance and experts' opinion. The study illustrates that there was a significant difference in job satisfaction of healthcare employees between two DGHs. Job satisfaction of employees working in DGH Trincomalee had higher mean score (4.55 ± 0.68) than those who were working in DGH Ampara (4.35 ± 0.77). Out of socio- demographic factors studied, age, staff category and service of period in current hospital had influence on their job satisfaction.

This study identified that training, teamwork, professional support, creativity and physical structure are main factors that influence job satisfaction of employees. Out of these, professional support and teamwork influenced the job satisfaction most in DGH Ampara and DGH Trincomalee respectively.

This study further describes that there was no significant difference in the attitude of hospital employees between two hospitals. Out of four socio-demographic factors studied, age, staff category and service period in current hospital had influence on their attitude.

It is evident from the study that five 'S' and Kaizen practice had negative influence on job satisfaction and no such influence on attitude of the employee. Five 'S' and Kaizen improves job satisfaction and positive attitude of employees towards their work. Therefore, it is necessary to further research on five 'S' and Kaizen influences on job satisfaction and attitude in detail. Recommendations are made according to the findings of the study in order to enhance the level of job satisfaction and attitude of healthcare employees.

0086.Koggalage, P.D.

A Project to facilitate optimum utilization of information , education and communication materials produced by the health promote on bureau for health promotion activities.

MD Medical Administration – 2019

SC 0001

Background: Information, Education and Communication (IEC) materials such as posters, flyers, leaflets, brochures, booklets, etc. are some of the printed means of promoting desired, positive behaviours of people. In Sri Lanka, Health Promotion Bureau (HPB) has been established as the focal point for health promotion and publicity activities in the country. It develops and distributes numerous IEC materials all over the country to address many health issues. These IEC materials are utilized by health institutions at different levels for their health promotion activities.

Statement of the problem: It has been observed and experienced that there were issues in utilization of IEC materials produced by HPB. The underutilization of IEC materials had adversely affected planned health promotion activities of other healthcare institutions.

Objective: This research project was undertaken to address these issues to facilitate utilization of IEC materials produced by the HPB.

Methods : This was an interventional research project conducted in HPB and RDHS, Gampaha and was designed in three phases. The pre-interventional phase aimed at identifying the mechanisms and also the gaps in accessing IEC materials by Health Education Officers (HEOs) at health district level and Health Education Nursing Officers (HENOs) at hospital levels. Various qualitative and quantitative techniques, namely Key Informant Interviews, Focus Group Discussions, Direct observations and Surveys were conducted during this phase.

Results : It was evident that many IEC materials produced were stagnating in the Central IEC Stores of the HPB whereas the HEOs and HENOs at district and hospital levels highlighted unavailability of IEC materials on time for their planned health promotion activities. Further, it was found that the existing mechanisms to access information on available IEC materials and place orders were not so effective and most of the HEOs and HENOs were not satisfied with the mechanisms.

Considering the above gaps, an online platform was developed with a categorized list of IEC materials available at HPB, an ordering mechanism, an online feedback mechanism about district level utilization and also with downloadable versions of available IEC materials to be used in an emergency situation.

The post-interventional evaluation was conducted using same techniques in the pre interventional phase to assess the effectiveness of the interventions. It was revealed that the interventions made the mechanism significantly more user-friendly and convenient. Also, it increased the number of types and amounts of selected IEC materials requested and dispatched after the interventions and thereby improved the utilization. Furthermore, in contrast to pre-interventional assessment there was a significant improvement in level of satisfaction of HEOs and HENOs about accessibility and usefulness of the new mechanism to facilitate utilization of IEC materials.

Conclusion and Recommendations : The interventions were effective in facilitating utilization of IEC materials. It was recommended to improve the online system further with inclusion of stock levels of IEC materials available and to implement this project in other health districts to improve utilization of IEC materials island wide.

0087.Kogagalage, P.D.

A Project to improve management of biomedical equipment in selected units of district General Hospital, Gampaha.

MD Medical Administration – 2019

SC 0002

Healthcare providers should always ensure delivery of an efficient health service with high quality and safety to their patients. Nowadays, with the continuous advancement in health technologies, different types of medical equipment are being used in the prevention, diagnosis, and treatment of diseases, as well as patient rehabilitation. Therefore, it is vital that the healthcare providers pay adequate attention on efficient and appropriate utilization of biomedical equipment and it is their responsibility to manage medical equipment in an efficient manner in all stages which include planning, acquisition, maintenance, repair and disposal.

However, it has been observed and experienced that there were issues in management of biomedical equipment in District General Hospital (DGH),

Gampaha. Therefore, this research project was undertaken to address these issues and was designed to be carried out in three phases as an interventional research project conducted in randomly selected three units; Medical Intensive Care Unit, Operating Theatre A&B and Ward 1. The pre interventional phase aimed at identifying the processes and also, the gaps in the system for management of biomedical equipment through qualitative and quantitative techniques, namely Key Informant Interviews, desk review of documents and surveys. It was evident that there was no proper systematic mechanism to record and quickly access information required for efficient management of equipment. Also, Incompleteness of information at the central and unit levels was found. Considering the above gaps, interventions were designed and implemented to improve the system for management of biomedical equipment in selected units. A central level computer based Biomedical Equipment Inventory Management System (BEIMS) was developed with information related to general identification, service/ maintenance and the availability of equipment. Also, a mechanism to maintain Personal Record Files was introduced at the unit level. The post interventional evaluation was conducted using same techniques in the pre interventional phase to assess the effectiveness of the interventions. It was revealed that the interventions made the vital information available and were effective in improving quick accessibility to necessary accurate information about particular biomedical equipment ($p<0.05$) and in turn, help efficient management of biomedical equipment. Furthermore, in contrast to pre-interventional assessment there was a significant improvement in level of convenience ($p<0.05$) and satisfaction ($p<0.05$) of the stakeholders about the newly established mechanism to improve management of biomedical equipment. It is recommended to link the BEIMS online with the respective units through pass codes to improve accessibility to information and also, to replicate this project in other units of the hospital as well.

0088.Kumari, M.K.

Assessing the usage of high-reliability organization principles in accident and emergency care units in selected Tertiary Care Hospitals, Western Province.

MSc. Medical Administration – 2018

D 4852

Health care systems are accountable to ensure safety and to provide a cost-effective service to the patients and the community. Safety is a dimension of quality which is an inherent continuous process of a Healthcare System. Due to of medical errors, healthcare systems have now started adopting principles of High-Reliability Organizations (HROs). Progress in implementing HRO practices needs to be identified.

This was a hospital-based descriptive, cross-sectional study carried out in accident and emergency care (A and E) units in three selected tertiary care hospitals in Western province, Sri Lanka. The study population was the staff working in respective hospitals, including doctors, nurses who are having direct clinical contact with patients. Data was collected using a self-administered questionnaire which contained two parts. First part regarding the practice of HRO principles which included five practices of five HRO principles, as dependent variables (Sensitivity to operations, Preoccupation with failure, Deference to expertise, Commitment to resilience and Reluctance to simplify interpretations) There were 25 questions in part A. Part B included five independent variables (organizational safety culture, leadership, communication, team structure and work environment). There were 25 questions in part B. Results were analyzed quantitatively and qualitatively. To check the five HRO practices (dependent variables), which are mentioned above, an observation checklist was also used. A total of 385 participants responded in the study.

"Sensitivity to operations" (Mean: 4.69, SD: 0.64) has the highest mean out of the five HRO Practices and "Difference to Expertise" (Mean: 4.2, SD: 0.81) has the lowest score. In the comparison of High-Reliability Principles with a benchmarked High-Reliability Organization's practices, there was an extremely significant (less than 0.0001) difference in the practices of HRO principles between selected A and E Units and High-Reliability Organization.

Organizational safety culture shows significant (< 0.01) effect on determining the variance of HRO practices if Organizational Safety Culture operates together with

the other four independent factors, 29% of the reliability of the HRO practices (dependent variable) can be explained by Organizational Safety Culture.

Selected A and E Units differ in practicing HRO principles than benchmarked High-Reliability Organization. Organization safety culture, which is essential in determining HRO practices, needs to be strengthened.

0089.Kumaravel, S.

Influence of knowledge and attitudes of nursing officers on the level of infection control, activities in secondary and Tertiary Care Hospitals in Jaffna District.

MSc. Medical Administration – 2017

D 4863

Infection control activities are set of practices carried out in healthcare settings to prevent or reduce Healthcare Associated Infections (HAI). HAI is a globally recognized problem with hospital wise prevalence of 5.9% to 19.1% globally and pooled prevalence of 10.1 in middle and low-income countries.

Objective of the study is to assess the level of knowledge and attitude of Nursing Officers who are working in Base hospitals Point Pedro and The Ilippalai and Teaching Hospital, Jaffna. With factors affecting their knowledge and attitude and to find the level of implementation of infection control activities with the influence of Nursing Officers knowledge and attitude and vice versa.

A descriptive cross-sectional study of influence of knowledge and attitudes of Nursing Officers on the level of infection control activities in Secondary and tertiary care hospitals in Jaffna district conducted during the period of December 2016 to 20 August 2017.

Total population was selected for the study. Self-administered questionnaire was used to assess the Nursing Officer's knowledge and attitude and two checklists were used to assess the implementation level.

A total of 231 respondents' answers were analysed and of these 66.7% found to have average overall knowledge with the mean of 65.5 ± 11.67 . Overall attitude is also poor as majority are with poor (50.2%) and average (39.0%) attitude group. Chi squared test was done to find any association between knowledge and attitude with selected socio demographic and service related factors. It was found that males, have statistically significant better attitude and Nursing Officers working in intensive care units has statistically significant better overall knowledge ($p < 0.05$).

Implementation level was poor in some aspects and better in some aspects. Proper sinks, special masks, heavy duty gloves, goggles are not available in more than three fourth of the units and sharp management alcohol hand rub, hand drying method are better in more than half of the units. However, only linen, sterile glove are available in more than three fourth of the units while only 26.0% has good knowledge on hand washing.

In where waste management implementation is good the knowledge of that hospital's Nursing Officers on waste management is high.

Self-realization of their level of knowledge on hand washing and blood borne infection has statistical correlation.

There are gaps in knowledge and attitude among the Nursing Officers including lack of training and shortcomings in implementation.

All these hospitals has to develop their own policy on infection control and base hospitals has to establish their infection control units with full time infection control Nursing Officers.

Facilities, trainings and monitoring systems have to be improved with immediate intervention.

0090.Liyanage, A.L.R.P.

**A Project to improve patient admitting system in Base Hospital- Homagama.
MD Medical Administration – 2017 D 4886**

Evaluation of hospital patient admitting systems can be done in different ways. Different vendors have found different methods to solve the same problem in different settings. The ultimate effort was to improve the efficiency of the system which will be more effective, productive with good quality standards. This interventional study was conducted to investigate the deficiencies in the current patient admitting system with the aim of improving the patient throughput and saving human hours by using Business Process Management (BPM) techniques.

The study setting is Base Hospital - Homagama and study population was all PCU (Preliminary Care Unit) staff and admissions to PCU. A total PCU stay of patients were studied and made inferences on patient admitting system.

Mixed data collecting methods were used to gather information on the current process in BH- Homagama. The prospective and retrospective data were gathered with quantitative and qualitative methods. Quantitative data were gathered by an observational check list, studying 162 patient admissions. Focus group discussions and interviews were used to gather qualitative data to understand the staff perceptions. Secondary data was collected through the desk reviews.

Descriptive statistics was used to analyze findings of the pre interventional data to make inference on the current patient admitting system of the PCU and identified the need for the improvement. The Business Process Management (BPM) techniques were used to PCU staff regarding the process improvement. Identify the processes and understand the gaps in the system.

This study revealed that there is inefficiency in triage system of the PCU. Average triage time spent for a particular patient was found as 9.89 minutes with the efficiency of 35.3%. Further it was found that the management of life threatening patients (Red category of triage) also in-efficient. Secondary data revealed that 9.8% of patients were Left Against Medical Advice (LAMA) and Missing from the PCU in first quarter of the year 2017.

An intervention was planned with the findings of the pre-assessment by process re-designing.

Multiple interventions such as work allocations among staff, selected direct admissions, rapid response team to attend emergencies, introducing a separate lab orderly and call center system to trace lab reports were introduced.

Qualitative post evaluation of the intervention was made by identifying perception of the PCU staff regarding the process improvement.

This study revealed that the PCU care can be improved by saving of human hours of both staff and patients through streamlining of processes, by process re-designing.

0091.Liyanage, D.H.

A Project to develop strategy form effective maintenance of prioritized “non medical equipment at Base Hospital Homagama.

MD Medical Administration – 2019

SC 0003

This research project was carried out to implement strategies for effective maintenance of a prioritized “non-medical equipment” at Base Hospital

Homagama (BHH). It aimed to prioritize and select a “non-medical equipment” and to develop and implement strategies for effective maintenance of the selected equipment.

Non-medical items of importance were selected using the two criteria, frequency of breakdown and impact on patient care. Operation Theatre, Intensive Care Unit and Labour Room, AC maintenance was prioritized and selected for the intervention due to its high impact and frequency of breakdown.

During the project formulation phase, both qualitative and quantitative techniques were used to study the process and practices. Qualitative techniques, including Focus Group Discussions and Key Informant Interviews, were mainly used for gap identification and designing of the interventions. Quantitative techniques, including a Self-Administered Questionnaire and checklists were used to obtain baseline data and assess the effectiveness of the interventions. Based on pre-intervention findings, literature reviews and comprehensive stakeholder participation feasible interventions were planned and implemented. Three months after the interventions, the post intervention phase was undertaken using the same instruments to assess the effectiveness of the improvements.

Results showed that there was an undue delay in getting ACs repaired once broken. Other issues identified were the non-availability of a service agreement, absence of separate maintenance logbooks and maintenance schedules, lack of clear directives and non-assignment responsibility for regular maintenance operations.

A package of strategies was developed to address the deficiencies in effective maintenance of ACs. The main strategy was the development of a Standard Operating Procedure (SOP) and ensuring its use for maintenance activities. This SOP describes specifications especially recommended for Operating Theatres, Intensive Care Units and Labour Rooms and step-by-step practices to be carried out for AC maintenance. Other strategies were establishing an AC service maintenance agreement; staff training and maintenance of log sheets and maintenance schedules, as per the SOP.

Post intervention results revealed that the involvement of all the stakeholders in project formulation and implementation had improved their level of satisfaction; increased process knowledge and awareness; increased traceability and reduced the mean AC downtime from 5.21 days $SD \pm 0.832$ pre-intervention to 2.33 days

with an $SD \pm 0.5$ after intervention; this was statistically significant at 5% level. In conclusion, developing a SOP and ensuring its use for maintenance activities namely, use of four different types of maintenance log sheets, signing an AC service maintenance agreement and staff training has improved AC downtime and the percentage of breakdowns repairs completed within 24 hours; reduced repeated breakdown of the ACs, thereby significantly increasing the level of satisfaction among all the stakeholders in this process in BHH.

Keywords: Air Conditioners, Standard operating procedure, Maintenance agreement, Downtime, Base Hospital Homagama

0092.Liyanage, D.H.

A Project to streamline research allowance process at education, training and research unit at Ministry of Health.

MD Medical Administration – 2019

SC 0004

This was an interventional research project carried out to streamline the research allowance process at the Education, Training and Research Unit (ET&R), Ministry of Health. The unit is the focal point for the formulation of policies regarding health-related research and provides financial initiative to the relevant senior officers who conduct research.

This project was carried out to identify the gaps in the existing research facilitation mechanism with a view to improving the efficiency, effectiveness and user friendliness of the research allowance process. It aimed to improve the knowledge of the research applicants thereby reducing revisits to the unit, reducing the cycle time of the process and increasing their overall satisfaction with the process.

Both qualitative and quantitative techniques were used in the study. Qualitative techniques, which included focus group discussions and in-depth interviews, were used primarily to identify the gaps in the process and to design a suitable intervention. Quantitative techniques, such as self-assessment questionnaires were used to obtain baseline data and assess the effectiveness of the intervention. Based on the pre-intervention, literature review and comprehensive stakeholder participation a feasible intervention was planned and implemented. Three months after the intervention, a post intervention assessment was carried out using the same instruments.

Undue delay in the process, the absence of all information, instructions and documentation as a bundle, inability to identify a liaison at the ET&R unit and non-

availability of a feedback mechanism were identified as Ministry deficiencies while incomplete applications and illegible handwriting deficiencies of research applicants. The average total time taken to complete the full research evaluation (cycle time -T1 to T5) was 141 days with $SD\pm 53.3$ in pre-intervention.

The package of interventions developed to streamline the process included a guideline that was published online, a process map, a document covering Frequently Asked Questions (FAQs), online research allowance application and progress report forms in an editable format, a checklist, a SMS alert system. Increasing awareness of the research allowance process among medical and dental officers was done via trade unions. Staff training and the introduction of “Deadlines for completion at five stages/time intervals” in the research allowance process were carried out in order to increase knowledge and streamline the process. The project outcome demonstrated an increase in process knowledge, satisfaction and timeliness and a reduction in the resubmission rate. The intervention has improved the average total cycle time to 78 days with $SD\pm 31.9$, which was statistically significant ($p < 0.001$). In conclusion the intervention addressed the issue of lack of knowledge regarding the research allowance process by providing information online in an easily accessible bundle; it included a checklist for document submission, an online FAQ, a process map, published guidelines, application and progress report forms in an editable word file format. It addressed some of the process delays by reaching a consensus with the Secretary of Health and the Deputy Director General (ET & R) regarding deadlines for completion at five specified stages in the process. These measures have helped reduce the research allowance processing time from an average of 141 days pre intervention to 77.9 days post intervention.

Keywords: Research Allowance, Guideline, Process Map, ET&R, and Ministry of Health

0093.Mayuran, N.

Factors associated with implementation of electronic indoor morbidity and mortality return at hospitals in eastern province, Sri Lanka.

MSc. Medical Administration – 2018

D 4855

Background: The electronic Indoor Morbidity and Mortality Report (eIMMR) system in Sri Lanka is national system that replaced manual recording and reporting

of indoor morbidity and mortality return (IMMR). A formal evaluation was done to assess the status of the system based on the clinical adoption framework.

Objectives: The objective of this study was to assess the factors associated with implementation of eIMMR in hospitals in Eastern Province, Sri Lanka.

Methodology: Descriptive cross-sectional study was carried out at hospitals in Eastern Province. Selected all 64 hospitals for this study were categorized by the level of implementation of eIMMR as follows.

Group 1 hospitals – eIMMR implemented completely.

Group 2 hospitals – eIMMR implemented partially.

Group 3 hospitals- eIMMR implemented not at all.

All Heads of institution and data entry personnel of eIMMR were included. Self-administered questionnaire 1 and 2 and observational check list 1 and 2 were used to collect data. Questionnaire 1 was used to assess the knowledge, attitude and self-reported skill of in-charge of data entry personnel of eIMMR, while the questionnaire 2 was used to assess the knowledge and attitude of Heads of institution. Observational check list 1 was used to gather the availability of human resource, while the observational check list 2 was used to get the information about the availability of infrastructure facilities for eIMMR.

Result: Majority of the data entry personnel (DEP) were Nursing officer in groups 1, 2 and 3 of hospitals respectively 37.5%, 35% and 61.1%. Overall, medical record staff were available only 5.3% of DEP. Availability of medical record rooms were in group 1 and 2 hospitals respectively 81.6% and 71.4% compare to in group 3, it was only 41.7%. All the hospitals from group 1 and 2 have computers with internet facilities, while less than one third of hospitals from group 3 hospital does not have them.

Nearly half (52%) of data entry personnel of eIMMR had scored good knowledge in group 1 hospitals ($p=0.01$), while around two third (63.6%) of Heads of institution had scored fair knowledge in group 2 hospitals ($p=0.02$). Nearly half of the data entry personnel had scored good attitude on eIMMR in group 1 and 2 hospitals ($p=0.33$), while overall, more than 40% of Heads of institution had perceived good attitude on eIMMR in all three groups of hospitals ($p=0.91$). More than 75% of data entry personnel had good skill in group 1 and 2, while only nearly one third (38.9%) had good skill ($p=0.01$).

Conclusion and Recommendation: Medical record staff who is responsible for eMMR were available very few. Majority of data entry personnel were Nursing Officers. Medical record rooms and internet facilities were not fully available, especially in group 3 hospitals. Knowledge score gap between the groups of hospitals were identified among data entry personnel as well as Heads of institutions. Attitudinal score gap among not only Heads of institutions, but also data entry personnel was not significant between groups of hospitals. Self-reported skill score gap of data entry personnel between the groups of hospitals was seen. This study recommends that appointing Medical record staff and providing computers and uninterrupted internet to all hospitals are essential for the successful implementation of eMMR. In-service training program for capacity building on eMMR should be scheduled to fill the knowledge and skill gap.

Keywords: Indoor morbidity and mortality return, Human resources, Infrastructure

0094.Nanayakkara , R.

An Assessment of geriatric care at medical units of district General Hospital Matara.

MSc. Medical Administration – 2018

D 4858

Introduction: Population aging is a universal phenomenon, but it appears particularly large for Sri Lanka. Population aging has many challenges in different aspects and its impact on health sector is enormous. Adapting the current health system to cater for an increasingly old population is becoming a serious and immediate requirement.

The main aim of this study was to assess the Geriatric care at Medical units of District General Hospital Matara.

Methods : Descriptive cross- sectional study was conducted at medical units of district General Hospital Matara. Study was consisted of three components. First component was the description of the socio demographic characteristics and assessment of health care needs of elderly patients. Interviewer administered questionnaire was used to collect the data from 422 elderly patients. Second component was the assessment of infrastructural facilities for elderly patients at medical units of DGH Matara. All medical units were taken to the study and check list was used to collect data. Third component was the

assessment of knowledge and attitudes of medical officers and nursing officers towards geriatric care at medical units of DGH Matara. Sample size was 108 and self-administred questionnaire was used to collect data.

Results: Majority (56.0%, n = 232) of elders were belonged to young elderly group and 54.1% (n = 224) of elders were males. Among the elders 92.3% (n = 382) were unemployed and 50.3% (n = 208) had no income at all. 17.4% (n = 73) of elders had impaired ADL status and majority (75.4%, n = 314) of elders had impaired vision. Only 25.1% (n = 104) of elders had impaired hearing status. 81.6% (n = 358) of elders had at least one disease out of ten diseases studied. Out of five dimensions, “entrance to the ward”, “equipment availability” and “toilet & dining areas of the wards” were generally good in all units. But “floor plan” and “signboards” of the wards were not up to standards in all units. Majority (54.1%, n = 53) of health care workers had no training on elderly care. Among the health care workers, 74.5% (n = 73) had satisfactory knowledge and 72.4% (n = 71) had positive attitudes towards elderly care.

Conclusion and Recommendations: ADL status, blindness, hearing status, urinary incontinence, and dementia and depression level of elders was associate with their age. Knowledge and attitudes of health care workers was associate with their training on elderly care. Elder’s health care needs should address by public sector or any other mechanism with minimum out of pocket expenditure. Hospitals designs need improvements in elderly friendly manner and training opportunities on elderly care should provide to health care workers.

Keywords: Geriatric care, Health needs of elders, Infrastructural facilities for elders, Knowledge, Attitudes

0095.Pathirana,W.P.Y.G.

Patient experience of serviceman admitted to selected wards of Army Hospital, Colombo.

MSc. Medical Administration – 2019

SC 0189

Patient experience is considered a key component in quality of healthcare. Assessment of patient experience is used to improve quality of healthcare and gradual and Continuous introduction of patient centred care as recommended by WHO. In line with World trends Sri Lanka also has started patient experience surveys. Although military Hospitals are expected to have best

quality of care, studies done on patient experience of military hospitals are scarce.

Even though, Army Hospital, Colombo, Sri Lanka is in the process of quality improvement, patient experience or patient satisfaction was never studied in the hospital. Hence, this study was carried out to study the in-patient experience to boost the quality improvement in Army Hospital, Colombo. Assessing the level of patient experience of inpatients of medical, general surgical and Officer's wards and describing the socio-demographic and service-related factors were the objectives of the study. This is a hospital based cross sectional descriptive study conducted from March 2019 to November 2019. Sample size was 423 and samples taken from seven strata (each ward) in their percentage of discharges. Data collection was done on August 2019 with a self-administrated five-point likert scale closed ended questionnaire prepared along the domains of, admission, hospital and ward, care and treatment, care of doctors, care of nurses and leaving the hospital. It was found that patient experience of all domains was well above the neutral level. Frequency analysis has shown that perceived patient experience is also at very high levels. It was evident that youngest age group had the best patient experience in hospital and ward ($F=6.334$, $P=0.002$), care of doctors ($F=5.024$, $P=0.007$) and care of nurses ($F=4.046$, $P=0.018$) domains. Lowest educational status group had the best patient experience in care and treatment ($F=4.014$, $P=0.008$) and leaving hospital ($F=3.928$, $P=0.009$) domains. Patient experience is better in participants without daily activity limitation in hospital and ward domain ($P=0.008$). Non-commissioned officers have significantly better patient experience than commissioned officers in leaving hospital domain ($F=5.086$, $P=0.007$). Soldiers of support regiments have significantly better patient experience than service units in care and treatment ($F=3.372$, $P=0.035$) and leaving hospital ($F=6.266$, $P=0.002$) domains. Participants without any medical category (no disability) has significantly better patient experience in hospital and wards ($F=10.450$, $P=0.000$) and leaving hospital ($F=4.643$, $P=0.010$) domains.

Timeliness of service delivery was positively responded by majority of the participants. Communication has also got majority of positive answers but a little lower than the other areas of patient experience.

From this study, it is identified that communication skills of the doctors and nurses in ETU, pre-operative and post-operative wards need prompt attention. Further in detail studies need to be done in the similar setting to identify the real problems and reasons for some group's significant association to patient experience.

Yearly patient experience survey should be conducted for comparison and assess the improvement of quality in the hospital.

Keywords : Patient experience, In-patient, Military, Army Hospital, Colombo, Sri Lanka

0096. Rajapaksha, D.M.P.

Assessment of the readiness for the implementation of the hospital health information system under primary health care reorganizing for non communicable diseases in selected hospitals in Kalutara district.

MSc. Medical Administration – 2019

SC 0185

Introduction : Documentation of health data puts a heavy workload on health care staff as it is based almost entirely on hand written paper records. With the advancement of new technology e- Health systems were introduced with multiple advantages in addition to reduction of work load.

E- Health systems are in an evolution of development and a common term Health Information System (HHIS) was used in this research. For better planning, readiness assessment should be done before its implementation.

Objective : The objective of the research is to assess the readiness for the implementation of Hospital Health Information System under Primary Care Reorganizing for NCD in selected Hospitals in Kalutara District.

Methodology : This is a cross sectional descriptive study conducted in selected Hospitals in Kalutara District. The research had two components. First component was to describe the IL HIS through a desk review and Key Informant Interviews with the experts.

Second component was the development of a readiness assessment tool and assessment of the readiness for implementation of HHIS. The tool has three major sections to assess. The readiness for IL HIS. They are, Technology and Infrastructure readiness, human Resource readiness and Workflow readiness.

The tool was developed under the supervision of experts in the field. Necessary data to fill the Human Resource readiness part of the tool was collected by a Self-Administered Questionnaire (SAQ LIS).

After developing the tool it was administered to three selected Hospitals in Kalutara District. For Technology and Infrastructure part and Workflow Readiness part of the tool data was collected by interviewing the MOICs of the selected Hospitals and direct observation of the Hospitals by principal investigator.

Results and Discussion: In desk review it was noted that functions of Ill IIS is changing with time providing various benefits for the Health system. Developed readiness assessment tool has three major sections to measure Technology and Infrastructure, Human resource and Workflow readiness of the Hospitals. Divisional Hospital Bandaragama (DHB) had 57.4%, 82.7% and 54.5% In Divisional Hospital Gonaduwa (IDIG) Technology and Infrastructure Readiness was 42.6%, Human Resource readiness was 80.4% and Workflow readiness was 43.8%. In Divisional Hospital Hultota (DIH) had 40.7%, 82.7% and 43.8% for readiness for Technology and Infrastructure, Human Resource readiness and Workflow readiness respectively.

Conclusions and recommendations: All three Hospitals have better Human resource readiness and relatively low Technology and Infrastructure Readiness and Workflow readiness.

It is recommended that Technology and Infrastructure Readiness and Workflow readiness should be improved before implementation of Ell IIS in DHCH and DH Hultota.

Keywords: Assessment, Readiness, Information system, Technology, Infrastructure.

0097.Ranasinghe, G.S.P

“A Project to strengthen the drug supply chain management , through an intervention of improving the knowledge and attitudes on drug supply chain management among pharmacists ,in Colombo South Teaching Hospital.”

MD Medical Administration – 2019

SC 0123

Supply Chain Management is the process which creates a product or a service from raw materials to final product that is consumed by the consumer. In this

process the product, information and the finance flow occurs both in forward and backward directions (Mentzer *et al.*, 2001). Supply Chain is a life cycle processes involving physical goods, information, and financial flows whose objective is to satisfy end consumer requisites with goods and services from diverse, connected suppliers (Ayers, 2001). Drugs are an essential component for running the health care institutions at National and Provincial levels. The success of drug management cycle in the health care institutions will depend upon the ability to reliably and consistently supply the standard quality medicines at affordable rates to health care facilities at all the levels of healthcare system (Javid Iqbal, Geer and Dar, 2018). In Sri Lanka, public health sector which is mainly divided to line ministry and provincial ministry health care institutions, which receive drugs through Medical Supply Division (MSD) and Regional Medical Supply Division (RMSD) respectively. Medical Supply Division.

(MSD) is the focal point for supplying of drugs throughout the country (Ministry of Health Nutrition and Indigenous Medicine, 2018). The pharmacists play a major role in Drugs Supply Chain Management (Avinash Verma, 2018), and the knowledge gap affects Medical Supply Chain Management (WHO Regional Office for Africa, 2004), (Avinash Verma, 2018), (International Pharmaceutical Federation, 2018). This research project was carried out with the objective to strengthen the Drug Supply Chain Management, through an intervention of improving the knowledge and attitude on drug supply chain management among Pharmacists, in Colombo South Teaching Hospital. This research project was carried out in three phases, with the alignment of project cycle steps which are Initiation, Planning, Execution and Closure and they were included into these three phases. In the Phase I the problems and gaps were identified as initiation and planning for conduction of the project was done. Execution or the implementation is done in the Phase II. Closure of the research project and evaluation of results were done in Phase III.

Key Informant Interviews and Focus Group Discussions were done to gather qualitative data. Questionnaire and Check List was used to gather quantitative data.

Monthly estimation of Drugs, Forecasting the drugs requirement, Calculating the Annual Drugs requirement, Ordering the drugs, Receiving the Drugs, Quality

checks, Dispensing, Keeping inventories and record keeping, Handling the Medical Supply Management Information System were satisfactory both in before and after the intervention. But the Store management, internal distribution to wards and units, and local purchase of drugs were improved after the intervention.

The overall pharmacists knowledge on Supply Chain Management, have improved in post intervention compared to pre intervention at a very significance level ($p < 0.001$). The overall pharmacists attitudes have significantly improved in the post intervention compared to pre intervention at $p < 0.001$ level. In-patient services have improved in Post intervention compared to pre intervention at p values ranged from < 0.001 to 0.002 . Patient satisfaction and percentage of drugs received also significantly improved in post intervention compared to pre intervention at $p < 0.001$ significance level. Radar diagrams on store management showed that there is an improvement in post intervention compared to pre intervention.

Improving the Knowledge and Attitudes on Drug Supply Chain Management among Pharmacists, is an effective intervention to strengthen the Drug Supply Chain Management at Institutional Level.

Keywords: Drugs Supply Chain Management, Pharmacists, Knowledge, Attitudes

0098. Ranasinghe, G.S.P.

“A Project to improve fund allocation process for the in-service training programs funded by education , training and research unit Ministry of Health.”

MD Medical Administration – 2019

SC 0124

Ministry of Health allocates a considerable amount of finances for capacity development of health workers through on the job training. Continuous Professional Development (CPD) through on the job training and lifelong learning are necessary to update the current knowledge and practices of healthcare staff to deliver quality and safe health care services. With this intention, funds are allocated for In-Service Training Programs (ISTP) from the Education, Training and Research (ET&R) Unit, Ministry of Health, Nutrition and Indigenous Medicine to health care institutions every year from the health budget. Timely dispersion of funds is a vital factor to conduct these programs effectively.

This project was carried out with an objective to improve fund allocation process for the in-service training programs funded by ET&R Unit Ministry of Health. It was conducted in three phases. Phase I pre intervention, Phase II intervention and Phase III the post intervention. To gather quantitative data a Questionnaire and Checklist was used in Phase I and III. Random sample of 55 institutional focal points were selected for quantitative analysis using a questionnaire. Key Informant Interviews and Focus Group Discussion were used to gather qualitative data in Phase I and III. In Phase II the interventions carried were, establishment of in-service training focal points, introduction of web-based details on proposal submission with the conduction of workshops and progress reviews for the established in-service training focal points and establishment of in-service database at the ET&R Unit Ministry of Health.

Results showed that the incompleteness of ISTP proposals, delays in receiving proposals, errors in title, objective and justification were improved significantly (at $p = < 0.05$ level) along with the availability of ISTP focal points at institutional level.

There was a significant improvement of inadequate resources at focal points after the intervention. The awareness on ISTP Excel format, awareness on the latest paying circular and awareness on how to fill the project component in the format, and awareness on how to fill the payment component improved significantly at $p < 0.05$ significance level. Availability of Human Resource Development plan, availability of annual training plan, training need identification, prioritization of the training needs, conduction of progress reviews and monitoring of ISTP, financial progress at institutional level and timely reception of funds have improved significantly with $p < 0.05$ significance level. The overall satisfaction of the Focal Points have improved $p < 0.001$ level. The process time taken for issuing funds allocation letter from the point of receiving the proposal to ET&R Unit, was significantly improved at $p < 0.001$ level.

The overall qualitative and quantitative results showed that there were significant improvements and this reflects that the interventions carried out were effective. The process improvements done by multiple methods have given significant improvement to the funds allocation process of ET&R Unit.

This sequentially gave significant enhancement to the conduction of ISTP in Sri Lankan healthcare institution.

Keywords: In-service Training Programmes, Process Improvements

0099.Ranasinghe, W.A.C.C.

Utilization of physiotherapy services in Police Hospital Colombo 05 Sri Lanka.

MSc. Medical Administration – 2018

D 4860

Introduction: Physiotherapy greatly impact on improving quality of life and supports to improve injury, illness or disability through movement and exercise, manual therapy, education and advice for people of all ages. Further, it helps patients to manage pain and prevent diseases. Also, the need for rehabilitation care is increasing, in which physiotherapy can play a significant role.

Objective: To describe the factors associated with utilization physiotherapy swamana services in Police hospital, Colombo -05, Sri Lanka.

Methods: A descriptive cross-sectional study was conducted at the physiotherapy unit of Police Hospital, Colombo over a two months period from March 2018 to April 2018. The study consisted of a desk review of the patients who visited the physiotherapy Unit at Police Hospital, Colombo for the last ten years from 2008, and a survey of those patients who visited the physiotherapy unit at Police Hospital (n=242), Colombo for eight weeks from March 2018. In addition focus group discussions were conducted with Physiotherapists and the medical officers who work in the medical, surgical, out-patient department and intensive care units. A checklist, an interviewer-administered questionnaire and moderator question guides were used to collect the data. Data was analyzed by using statistical package for social sciences software.

Results: Comparing with the national standards, the space, cleanliness and security were adequate, while almost all essential equipment were available the physiotherapy unit for providing the service. Relevant training and development opportunities were low. Appraisal, discipline and awarding of rewards were not carried at all in the unit. The majority of the study participants were in the age groups of 40-49 year (n=79; 34.5%) and were males (n=145; 63.3%). Out of all study participants who participated, 34.1% (n=78) had a monthly family income of

40,001- 50, 000 rupees and 130 (56.8%) study participants were completed GCE A/L. Most of the study participants (n=170, 74.2%) were employed, out of them, 152 employed in the Police Department.

From 2008 to 2017, the highest number of patients attended was in 2011, but the highest treatment offered was in 2010.

Conclusions and Recommendations: Most of the study participants (n=225, 98.3%) had a good perception of the utilization of physiotherapy services. After controlling the other covariates, the treatment continuation was significantly associated with male sex (OR=1.3); a higher level of education (OR=1.08), higher income of Rs.20,001- 50,000 (OR=2.05) and Above Rs. 50,000 (OR=1.83) and presence of comorbidities (OR=1.02). Thus, higher educated, male patients with higher income tend to receive the service at the physiotherapy unit at the Police Hospital. These findings were as expected since this facility is exclusively for the police department employees and their dependents.

Increasing of the functional space, good housekeeping and rearranging the service provision area is recommended. Human resource management should be strengthened with special reference improving training and development opportunities; improving service appraisal, and awarding of rewards. Increasing awareness on available physiotherapy services among MO by getting them to attend periodic continuous professional development should be encouraged.

Strengthening physiotherapy services by targeting for those above 40 years and increasing awareness of the services available for them is also recommended.

Keywords: Disability, Physiotherapy, utilization of healthcare

00100 .Rangala, R.M.

Factors affecting the continuous quality improvement programme at the Police Hospital in Sri Lanka.

MSc. Medical Administration – 2019

SC 0136

Healthcare managers are responsible and accountable to provide quality as well as cost effective services, to their patients and community at large. Objective of this study was to identify the factors affecting the Continuous Quality Improvement programme at the Police Hospital, Colombo, Sri Lanka.

This was a descriptive, cross sectional survey carried out at Police Hospital, Colombo. Various categories of staff working in this hospital were considered as

the total population for this research. The staff included doctors, nurses, allied health staff, attendants and Police Constables/Sergeants. Data was obtained using a self- administered questionnaire, which was pre-tested at the Colombo East Base Hospital Mulleriyawa. A total of 250 participants responded within the stipulated time and this study could identify the top management commitment, training, team work, physical resources and performance monitoring system as independent variables which influences the implementation of the Continuous Quality Improvement programme.

The Pearson correlation of 0.731 between top management and the implemented programme denoted positive influence of leadership while, the monitoring system which also showed a strong correlation of 0.646 had a positive effect, in the implementation of this programme. The correlation of teamwork and physical resources were 0.633 and 0.596 respectively while training showed the lowest correlation of 0.501 which, indicated that the hospital staff perceived this concept as less influential. The socio- demographic factors such as age, gender, service years and education level of the staff were observed, as not being statistically significant in influencing the implementation of this programme.

Index items: Continuous Quality Improvement, staff, top management commitment, training, physical resources, monitoring system

0101.Ranawaka, N.

Assessment of noncompliance of tuberculosis treatment in intensive phase at Kalutara district.

MSc. Medical Administration – 2018

D 4853

Introduction: Tuberculosis (TB) occurs every part of the world and one of the top cause of death in worldwide. Reducing the noncompliance among TB patients are important for treatment success and to prevent drug resistant TB.

Objectives: Objective of this study is to assess the factors associated with Noncompliance of TB treatment in intensive phase and to assess the selected covariates at Kalutara District.

Methodology: This was a descriptive cross-sectional study. Study comprised of the TB patients registered in District Tuberculosis Register Kalutara for period of six months. Entire study population was recruited for the study. A structured, pre-tested interviewer administered questionnaire was used to collect data. Data

were collected from all responders from the chest clinic and by field visit. Data entered to a EpiData software and exported to an analyzing software.

Result : There were total of eligible 267 patients for the study. Fifteen patients did not response and data were collected from 252 patients. Mean age of study group was 49.5 years and the group consisted of 63.5% (n=160) males and 36.5% (n=92) females. Among them 77% (n=194) were married. Majority were Sinhalese (57.2%, n=144) and Buddhist (53.2%, n=134). The noncompliance rate was 18.3% (n= 46) among newly diagnosed TB patients in Kalutara District. Only 13.5% (n=34) TB patients visited directly observed treatment (DOT) provider daily. Majority (61.9%, n=156) of DOT providers did not observe for drug intake and it was significantly associated with noncompliance ($\chi^2=4.7994$, $p=0.028$). Side effects of the drugs were significantly associated with noncompliance ($\chi^2 = 4.131$, $p=0.042$) to TB treatment.

Educational level Ordinary level (O/L) or below ($\chi^2=4.2904$, $p=0.038$), living environment of the TB patients ($\chi^2=13.338$, $p=0.004$) and living along without care giver ($\chi^2=4.633$, $p=0.031$) were significantly associated with noncompliance to TB treatment. Mean total non -medical expenses for one patient per day for attending to DOT center was 341.61 Sri Lanka Rupees (SLR). Mean total medical expenses for one patient in intensive phase was 1254.13 SLR.

Conclusions and Recommendations. Noncompliance with the treatment is still a common problem among TB patients. Special emphasis should be made on TB patients with education level O/L or below, living in slum areas, estate sectors and patients living along without caregiver. Motivation for regular drug intake, proper supervision and education should be done for TB patients who have risk of inadequacy of adherent to DOTS policy of National Programme for Tuberculosis and Chest Disease, within the health care system in Kalutara District. Proper programme should arranged to make DOT providers adhere to the DOTS policy.

Despite of free health care system in Sri Lanka, “Out of Pocket Expenditure” for daily DOTS were high. It is recommended to enhance the financial or materialistic support to decrease the barriers in compliance.

Keywords: Tuberculosis, noncompliance, DOTS, Out of Pocket Expenditure

0102. Ratnayake, R.M. W . S.

The Household economic burden at chronic kidney disease (CKD) patients managed at provincial General Hospital Kurunegala.

MSc. Medical Administration – 2019

SC 0130

Background : Prevalence and economic burden Chronic Kidney Disease (CKD) is increasing in Sri Lanka. The issue has been further magnified by the emergence of CKD of unknown etiology (CKDu). This study aimed to determine the out of pocket expenditure (OOPE) and the catastrophic health expenditure (CHE) among CKD patients managed at Provincial General Hospital (PGH) Kurunegala.

Method : A cross-sectional survey was conducted among 300 participants in the renal- ward, renal clinic, and the hemodialysis unit of PGH Kurunegala. Interviewer administered-questionnaire gathered the data. The OOPE (direct health care cost and non-health care costs, and indirect cost) and the proportion of catastrophic health expenditure (CHE) due to CKD was calculated. The CHE was estimated using ratio between out of pocket total medical expenditure and total household income. The thresholds were considered as 25% and 40%.

Results: Majority were male (65.8%) and the mean age was 56 years (SD 12.4). Direct no health care cost was the major cost component contributing to OOPE. The mean OOPE for an inward, clinic and hemodialysis was Rs.18,495.00, Rs.6,316.00 and Rs.16,187.00 per patient per month respectively. Nearly 36% of the participating households experienced CHE at the 25% threshold level. It was 23.2% at 40% threshold level. The proportion of CHE, considering the 25% CHE threshold was 53.8% inward, 14.9% clinic and 48% hemodialysis patients. Considering the 40% threshold level, 34.6%, 7.5% and 29% of inward, clinic and hemodialysis patients experienced CHE. Age, gender and income level were significantly associated with CHE ($p < 0.05$).

Conclusion: The OOPE and the proportion of CHE was high amongst patients obtaining services for CKD at PGH Kurunegala.

Keywords : CKD, Household economic burden, Out of pocket expenditure, Catastrophic health expenditure.

0103.Sasikumar, T.

Utilization of haemodialysis services by and stage renal disease patient selected hospitals in eastern province, Sri Lanka.

MSc. Medical Administration – 2018

D 4866

Introduction: Haemodialysis is the main treatment modality available for End Stage Renal Disease patients in Sri Lanka. Healthcare utilization is defined as the measure of the population's use of the health care services available to them. To improve the services provided it is important to study the utilization of haemodialysis.

Objective: The purpose of the study was to describe the utilization of haemodialysis services by End Stage Renal Disease patients in selected hospitals in Eastern province.

Methods: A descriptive cross-sectional study was conducted in 2018 at haemodialysis units of tertiary care hospitals in Eastern province; District General Hospital Trincomalee, Teaching Hospital Batticaloa, District General Hospital Ampara. All End Stage Renal disease patients who were more than 18 years and on regular haemodialysis at these selected three hospitals were included (n=146). Interviewer administered questionnaire was used to collect data from haemodialysis patients and analysed using SPSS software. Grade medical officers and Nursing officers attached to the haemodialysis units of selected three hospitals were also included in the study. Focus group discussion was conducted with the guide. A check list was used to collect data regarding the facility.

Results: The Response rate was 82.5%. The Majority (51.4%) were between 41 -60years of age and 67.1% of the respondents were males. Among the participants 37.7% of them were Moors and Islamic religion. The majority (89.7%) of the respondents were not employed at the time the study was conducted and 50.7% family income was less than 10000 Sri Lankan rupees. DGH Ampara did not have a consultant nephrologist and only two sessions of hemodialysis were done here compared to other two where three sessions were conducted. Also, area of dialysis units were below the recommended level of international health facility guidelines. Almost all the emergency equipment's were available at all three hemodialysis units. Majority of the respondents

(58.3%) perceived treatment controlled worsening of their illness. Also, 85.6% perceived hemodialysis controlled symptoms of the disease. Moreover, 95.9% of the respondents perceived it was highly/very important to follow dialysis schedule and 87.7% reported it was convenient to follow dialysis schedule. Almost all the respondents (99.3%) had mentioned that nurses had given good. There were statistically significant association between Hemodialysis attendance and awareness of treatment options ($p=0.009$), Distance from home to dialysis unit ($p=0.033$), travelling time to / from dialysis unit ($p=0.019$), Expenditure for each dialysis ($p<0.01$) and receiving Chronic kidney disease assistance ($p=0.007$). Interestingly all the participants liked overall services provided at the dialysis units.

Conclusion and Recommendations: Majority of the respondents perceived hemodialysis in appositive way. They were happy about the services in the unit and about the staff attitude. Anyhow `there were respondents who had missed dialysis during last three months duration. Factors significantly associated with hemodialysis attendance were awareness of treatment options, Distance from home to dialysis unit, travelling time to / from dialysis unit, Expenditure for each dialysis and receiving chronic kidney disease assistance. It is a recommended to introduce an easy system for low income patients to get government assistance and start health education programme for vulnerable groups on chronic kidney disease and treatment options at hospital and community level.

Keywords: Haemodialysis, Utilization, Perception, factors affecting

0104.Samarawickrama, M.S.

The Economic burden due to diabetes mellitus among patient attending out patient clinics at the Army Hospital.

MSc. Medical Administration – 2019

SC 0183

Background: Diabetes mellitus is a chronic non-communicable disease with rising global prevalence. It affects the quality of life and causes negative socio-economic consequences to the patient. family. and to the country. This study aimed to explore the economic burden due to diabetes among patients attending out-patient clinics at the Army Hospital Sri Lanka.

Methodology: A hospital-based, descriptive cross-sectional study was conducted among a convenient sample of 200 out-patients using a self-administered questionnaire. This was a prevalence-based study using the “cost of illness approach.” Direct and indirect costs and the selected socio-demographic factors associated with the economic burden were studied.

Results: The majority were males (95.5%: n=191), and the mean age was 41.7 years (+SD 6.77 years). The mean duration of illness was 5.06 years (+SD 4.307 years). The estimated mean direct cost was 9949.11 LKR per patient per year. The direct medical cost comprised 65% of the total direct cost. Majority {54%: n:108} incurred costs for investigations. The highest (5th) quintile incurred the highest mean direct cost. And lower quintiles had incurred a higher out of pocket spending burden ratio. Indirect cost measure through lost earnings was not observed in this sample. The cost of absenteeism comprised 48.97% of this indirect cost. However, the loss to the government was 30830.53 LKR per patient per year. The cut-off for the high economic burden to the patient was the 75th percentile of out of pocket expenditure. The economic burden to the patients was higher among older males with a lower income ($p < 0.05$).

Conclusion: This study findings will provide information for health care planning and policy decisions to reduce the economic burden on patients with diabetes mellitus in the Sri Lanka Army.

Keywords: Economic burden, Diabetes mellitus, Sri Lanka Army

0105.Senarathne, H.D.

Post retirement re-employability of government sector Nursing officers in the Western province of Sri Lanka.

MSc. Medical Administration – 2018

D 4903

Background: Considering the present background of rapidly expanding private and public health sectors, aging population and rising dependency rate, Sri Lanka needs to take proactive measures to overcome impending substantial dearth of a key human resource in the health sector, which is the category of nurses. Re-employment of Nursing Officers following formal retirement can be considered as a solution to address the concern with regard to the shortages in nursing carders. Lack of skilled, knowledgeable, qualified, experienced nursing staff, would lead to adverse health outcomes. Objective of this study is to assess the

factors associated with the re-employability of government sector nursing officers (i.e. after formal retirement) in the Western Province of Sri Lanka.

Method: This descriptive cross-sectional qualitative study was conducted in primary, secondary and tertiary care government hospitals. Proportionate to the population, simple random sampling was performed to select the respondents. The data was collected using an interviewer administered questionnaire and are presented as frequency distributions. In addition, Cross tab, Chi-Square test and for significance testing and Mann-Whitney U tests were used to analyze and interpret data.

Results: Out of the 287 study sample 71.1% were not willing to be re-employed while 28.9% are willing to be back in employment.

Those of who were willing to be re-employed, majority (63.86%) preferred the private health sector than government health sector (25.30%). In addition, 10.84% preferred either or both sectors for re-employment. Positive relationships as well as negative relationships were being confirmed by the study in relation to nine (9) variables studied under three dimensions. Re-employability was not affected by socio demographic factors and education. Health, experience, ability to use common medical technologies were positive drivers for re-employment. Lack of IT skills, second language skills and attitudes on selected nursing care aspects affected the decision adversely. Personal decisions, expectations, economic status and family commitments were found to be the major determinants affecting re-employability. Claims made by nurses who were not willing to be re-employed indicated the serious impact that had engulfed upon them, due to their demanding work life.

Conclusion : Findings have some similarities to the studies done in other countries. Majority of nurses are not willing to re-employ following retirement. Influences of factors associated with family in making retirement decisions, is a unique feature in the Sri Lankan context. Interventions in skills, attitudes and promotion of re-employment as a retirement plan will further increase the re-employability. Impact of nurses' work life on personal and family, needs further study.

Keywords: re-employability, elderly employment, registered nurse, Human resource for health

0106.Senevirathne, Y.G.H.C.

Employee engagement among Nursing Officers working in government hospitals in Matale district, Sri Lanka.

MSc. Medical Administration – 2018

D 4904

Aim: This research was conducted to assess the level of the employee engagement and Associated factors among nursing officers in Matale district.

Background: Current shortage of staff and over work load justify further study on employee engagement, which is a positive psychological concept, constructed by composing vigor, dedication and absorption. It is closely related to job satisfaction and a predictor for patient satisfaction; requires further empirical evidence supporting its relevance. Most of the past studies focused on individual factors, organizational factors and its outcomes. But in Sri Lanka employee engagement among nursing officers inadequately examined.

Method: Descriptive, cross sectional, quantitative study was conducted by using a self-administered questionnaire over the period of thirteen months from September 2017 from a convenience sample of 228 nurses working in government hospitals in Matale district.

Results: Overall mean value for work engagement is 3.772 with standard deviation of 0.477, which falls into the category of ‘strong’ level of engagement. Pearson correlation test was performed at 95% confidence level, Job characteristics, Supervision, Team work and Training and Development have statistically significant association with employee engagement. Age and Work experience also have positive correlation with employee engagement while Gender, Type of hospital working, and Type of unit working haven’t significant positive relationship. According to the multiple linear regression test “Job characteristics” is the highest influencible factor while Training and Development is less influencible than others.

Conclusions: The study disclosed the fact that nursing officers working in government hospitals in Matale district are strongly engaged with the job. Antecedents for employee engagement are Job characteristics, Training and Development, Supervision and Team work. The study also found that more older and most experienced nurses are more engaged with the job. Most dominant factor is Job characteristics. Training and Development is less dominant than other factors. Further empirical studies with more qualitative methods are

needed to find the causations for such associations and to get deeper understanding regarding the topic.

Keywords: Employee engagement, nursing officer, antecedents, patient satisfaction.

0107. Singhaprathapa, S.W.M.K.K

Selected factors associated with treatment compliance among patients attending mental health clinic in Teaching Hospital Kandy Sri Lanka.

MSc. Medical Administration – 2019

SC 0192

Introduction : Non-compliance to treatment has been identified as a major factor in therapeutic failure in routine practices and scientific therapeutic trials and directly related to poor prognosis.

Eighty percent admissions to mental health wards were caused by non-compliance among patients attending mental health clinic at Teaching Hospital (TH) Kandy for last two years period (TH Kandy, 2018).

Objective : General objective was to determine selected factors associated with treatment compliance among patients attending mental health clinic in TH Kandy.

Methodology : Hospital based cross-sectional descriptive study was carried out at TH Kandy using systematic random sampling technique and the sample size was 427. There study instruments were used namely Interviewer Administered Questionnaire on selected factors associated with treatment compliance (IAQSFATC) for patients. In depth interview 9 IDI) for Consultant Psychiatrists and a check list for service availability (CISA) that was filed by principal investigator (PI) . Latter two instruments were used to complement the IAQSFATC period of study was one year period from 16.10.2018 to 15.10. 2019.

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

Conclusions: Patient related factors associated with compliance were living alone, poor family support , poor insight, stigma , type of illness, sides effects of drugs , unaffordability of drugs , travelling time, distance to the clinic and living status. Health service related factors associated with treatment compliance were waiting time at clinic, waiting time at pharmacy , unavailability of drugs, discrimination by health staff, unavailability of some staff categories, lack of training of clinic staff and lack of social workers support.

Recommendations : There should be a separate counter at pharmacy for mental health clinic patients and that would minimize waiting time at pharmacy in THK. Strengthen the multi-sectorial collaboration to reduce stigma by media and community programmes through community mental health workers.

Keywords : Selected factors, treatment compliance, mental health, non compliance.

0108.Siriwardena, H.M.T.I.

Factors associated with burnout of nursing officers in provincial General Hospital Badulla.

MSc. Medical Administration – 2019

SC 0135

Burnout is common amongst medical personnel. Therefore, it has become subject of interest in the field of healthcare. Nursing is one of the vulnerable professions in healthcare.

The objective of this study was to ,find out first if burnout exists in nursing officers of Provincial General Hospital Badulla, next to find out the correlation between burnout and socio-demographic factors, finally to find out the correlation of burnout with work-related factors.

The study was hospital based cross-sectional descriptive.

A sample population of 355 (n=355) nursing officers were selected through a stratified random sampling method from a total of 626 nursing officers at PGHB. The sample represented all the units and sections of the hospital.

The Copenhagen Burnout Inventory was used as the tool to measure burnout in three factors, personal burnout, work related burnout and client (patient) burnout.

The analysis of socio-demographic factors revealed that there was an association between burnout and the level of education. The higher the education ,the higher

was the level of burnout (95% CL; ANOVA $p=0.025$). There was an association between having children and burnout. Not having children meant having a higher burnout (95% CL; $p=0.001$). Nursing officers who were unmarried, had a higher burnout (95% CL; ANOVA $p=0.021$). The perception of a poor personal health had a higher burnout (95% CL; ANOVA $p=0.000$). Officers who didn't have their own house had a higher burnout compared to those who did (95% CL; ANOVA $p=0.000$).

The analysis of work-related factors revealed that, nursing officers who worked in surgical units had a higher burnout (95% CL; ANOVA $p=0.026$). Nurses who belonged to service grade III had a higher burnout (95% CL; ANOVA $p=0.003$). High burnout was present in nurses who had to do a shift duty in another unit during the past six months (95% CL; $p=0.032$). Nurses who perceived that the number of nurses working in the unit was not adequate had a higher burnout (95% CL; ANOVA $p=0.023$).

A multisectoral, pluralistic approach is needed to address nurse burnout.

0109.Thotagamuwa, T.W.A.N.

Assessment of quality of services of out patient department (OPD) of selected primary healthcare Institutions in Kalutara district.

MSc. Medical Administration – 2019

SC 0138

Quality in health care services is an inevitable part in the service delivery of patients. Outpatient department is the entry point to curative care. Therefore the objective of this study was to assess the quality of services of outpatient departments of selected primary healthcare institutions in Kalutara district. As per the context of government policy, it has been decided to absorption of estate hospitals to national health care system, Assessment of service quality in existing absorbed estate hospitals is a needed requirement. So the study was focused only on these existing estate hospitals.

The study was a descriptive cross sectional study. The study consisted of five specific objectives. The first specific objective aimed to describe socio demographic factors of patients attending to outpatient departments. Second one attempted to describe the SERQUAL modal with respect to primary health care institutions. Third specific objective was to find out the expectation of service quality by patients. Fourth one aimed to find out the perception of service quality

by patients. Last specific objective aimed to identify gap between expected and perceived service quality of patients.

Methodology: Parasuraman's SERQUAL model with its five dimensions was used to assess service quality in this study. The pre tested check list was used to describe SERQUAL model in relation to primary health care institutions. A pre tested interviewer administrated questionnaire was applied on 422 randomly selected patients in these settings. The response rate was 95.5%. Collected data were compiled and analyzed by using SPSS. Statistical analysis includes descriptive analysis, reliability testing, independent sample t-test and one way ANOVA.

Results: Validity and reliability was established. Majority of patients were attending to these hospitals are married Sinhalese male patients from rural areas. The study observed space availability for waiting areas, Up to date equipment and human resources were found to be deficient.

The results of the study indicated that highest mean score for expectation was recorded in Tangible dimension (5.774) and lowest score for Assurance dimension. The highest perception mean score was recorded in reliability dimension (5.033) and lowest score (4.309) for Tangibility.

Highest gap between expectation and perception belonged to Tangibility (1.4648) and lowest gap to reliability dimension (-0.7396). The result on overall quality of services provided at outpatient departments of the study setting is poor quality. According to the result, significant gap observed in service quality (-0.943).

Conclusion: The significant difference observed in the patient's expectations and perceptions by government absorbed estate hospitals in five dimensions of service quality.

Recommendation: Repeated and periodic evaluation of service quality at the same study setting by using SERQUAL model will help to assess the trends in service quality gap and improve the quality of health care and overall patient's satisfaction. This type of studies should be done in other plantation district.

0110.Wickramanayake, H.M.K.

Critical analysis of the quality assurance procedures of time and temperature sensitive pharmaceutical products (TTSPPs) in central medical supplies division, regional medical supplies divisions, Tertiary and secondary care hospitals in the north western province in Sri Lanka.

MD Medical Administration – 2020

SC 0172

Introduction: The World Health Organization has identified access to essential medicines, vaccines and technologies as one of the six building blocks of a health system, which signifies the importance of pharmaceutical products in the healthcare system. Out of these, ensuring safety and quality of Time and Temperature Sensitive Pharmaceutical Products (TTSPPs) is a key requirement in any health system and will reflect the true capacity and capability of overall supply chain management of medicines since these represent the most sensitive products for quality and safety issues. In the Sri Lankan healthcare system, there is a lack of scientific data on comprehensive quality assurance procedures in relation to TTSPPs in the supply chain management of pharmaceuticals.

Objective: To develop and validate a tool to evaluate the quality assurance system of TTSPPs, using it to perform a critical analysis of the quality assurance procedures in the central and regional Medical Supplies Divisions, tertiary and secondary care hospitals in the North Western Province and to explore the challenges associated with the adherence to the recommended guidelines.

Methods : The component 1 of the study was to develop and validate a quality-assurance assessment tool covering the main 5 recommended domains i.e. general storage, temperature control storage, transport, stock management and documentation record keeping, through comprehensive literature review and expert opinion. The judgmental validation was done in four rounds using the modified-Delphi technique with the consultation of 24 experts who were purposively selected from multi-disciplinary fields.

In the component 2, a descriptive cross sectional study was conducted to assess the degree of adherence to the quality assurance guidelines of TTSPPs in Central Medical Supplies Division, Colombo, 2 Regional Medical Supplies Divisions, 11 Secondary and Tertiary care hospitals, The study population consisted of the units involved in the logistical handling of TTSPPs. Scores were calculated for each domain and subdomains, and expressed as a percentage score. Descriptive statistics, Kruskal Wallis test with post-hoc analyses were used.

A qualitative study was conducted as component 3, with semi structured in-depth interviews (IDIs) to explore the barriers to adhering to the quality assurance system of time and temperature sensitive pharmaceutical products. The officers who are responsible for maintaining quality assurance system in the institutions were included for the IDIs. Purposive sampling method was applied in selecting the key informants and data collection was concluded when the principal investigator was satisfied that the theoretical saturation point was reached. A total of 29 in- depth interviews were conducted. Audio recordings of the interviews were later transcribed and thematic coding was done. Ethical Clearance was obtained from the Ethical Review Committee, Post Graduate Institute of Medicine, University of Colombo.

Results: General storage domain scores in the MSD was 95.56% and the scores of RMSDs, tertiary care and secondary care institutions ranged from 77-78. However, the score for uninterrupted power supply was lower in RMSD as well, being similar the hospital scores.

The temperature-controlled storage domain demonstrated relatively lower score of 46.1. The tertiary and secondary care hospitals had mean score range of 40 to 55, compared to the MSD and RMSDs (mean Score \approx 85). MSD and RMSD had maximum scores of 100 for storage of TTSPPs, temperature controlling and monitoring equipment and preventive equipment maintenance. For tertiary care hospitals, a wide variation of performances was observed between institutions. In most of the indoor dispensaries, wards and units, preventive maintenance and contingency plans were not observed giving a score closer to 50%. The following three sub-domains showed exceptionally lower scores: “monitoring for temperature and humidity” (19.58), alarm system requirements (0.0) and equipment calibration (1.66). Similarly, secondary care hospitals had lowest scores for monitoring of temperature and humidity (9.80), requirement of alarm systems (0.0) and equipment calibration (0.0). Most of the time it was observed that drug stores, indoor dispensaries and wards comply with FEFO and other requirements achieving above 84 score for the sub domain Arrangement of Stock of TTSPPs”.

Overall domain score of transport was 31.1%. The institutional domain scores were below 45% with unit wise domain scores in the range of 30- 40%. During transport, monitoring of the temperature was done rarely. This incurs a significant impact when transporting TTSPPs for long distance. No system was observed at least at the

institution level to monitor temperature during transportation giving the subdomain score of <25%. Regular calibration of the monitoring devices and control devices were not done at institutional or unit level, giving the lowest score for the calibration subdomain (<5%).

The stock management domain also had lower mean score of 55.7. The MSD and RMSD had higher scores than the tertiary care (55.1) and secondary care (54.4) hospitals. A notable advanced score of 100.0 was seen in the MSD and mean score of 75.7 for RMSD. MSD had a well-planned system of stock management and fulfils all the considered factors and does all receiving, issuing and returning procedures through MSMIS system. RMSD and main stores in the tertiary and secondary care hospitals used MSMIS in stock management. However, MSMIS system had not been introduced to indoor, wards and units at the time of data collection. Hence, drug stores were performing better compared to others with a mean score of 70.5 with indoor dispensaries with 5 points lower. The other two units were having scores on or closer to 55.

The overall domain score for “General Procedures and record-keeping of TTSPPs” was 65.3. The highest scores were observed in the RMSDs (i.e. 90.77) followed by MSD (78.46) and the lowest in secondary care institutions (61.87). In the hospital level, drug stores and indoor dispensaries were performing better than other two units. However, for the latter units (i.e. ICU and theatres and wards) were having scores between 60 to 65. For the subdomain of contingency arrangements, both MSD and RMSDs had a score of 73.33 whereas the hospital showed a relatively lower score of 53.33 and 51.88 respectively for tertiary and secondary care. Similar pattern was observed for the second sub-domain. Following factors were identified as barriers to adhering to the quality assurance system in the in-depth interviews; unavailability of designated storage place, facilitates and space, unavailability of basic temperature monitoring and humidity control system, limited access to MSMIS system, no proper emergency and preventive maintenance system, lack of temperature controlled transport vehicles and cool boxes, poor maintenance and calibration of temperature monitoring equipment, non-availability of training programs on TTSPPs, poor documentation process, and lack of human resources.

Conclusions and Recommendations: The developed and validated tool could be effectively use to evaluate the quality assurance system of TTSPPs in Sri Lanka. Across all institutions, the transport domain was observed to be with the lowest scores

and the general storage with the highest. It was noticed in general that although MSD and RMSD were performing relatively better, the performance of institutional units and wards were not up to the standard in quality assurance of TTSPs. Further studies in the areas of quality assurance related to registration and procurement, quality assurance process and association between adherence to quality assurance guidelines and effect on product quality/safety and efficiency is recommended.

Keywords: Time and Temperature Sensitive Pharmaceutical Products, Quality assurance, TTSPs, Good Distribution Practices, Storage of drugs, Transport of drugs

0111. Wijekoon, W.M.C.R

Clinical governance climates in Base Hospital and in the district General Hospital in Kandy regional directorate of health services in Sri Lanka.

MSc. Medical Administration – 2019

SC 0137

Introduction : Clinical Governance Climate (CGC) is the shared perceptions of employees on strategies and internal processes of Clinical Governance (CG) which is one of the important pillars of healthcare governance. Studying CGC would assist understanding the favorable organizational climate supportive of implementing CG.

Objective : To assess the Clinical Governance Climate in Base hospitals and in the District General Hospital in Regional Director of Health Services area in Kandy

Methodology : A descriptive cross-sectional study was conducted in District General Hospital (DGH) Nawalapitiya. Base Hospital (BH) Gampola and BH Theldeniya. Medical Officers, Nursing Officers, special grade and grade I Officers of professions supplementary to Medicine who had at least three months service experience in hospitals were included. Proportionate stratified random sampling was executed to select the sample. Pretested self-administered Clinical Governance Climate Questionnaire (CGCQ) and a check list of Institutional Activities Supportive of Clinical Governance Climate (IASCGC) were used as study tools. CGUQ was a validated tool used for international studies and consisted of six factors (Planned and Integrated Quality Improvement, Proactive Risk Management, Climate of Blame and Punishment, Working with Colleagues, Training and Development and learning). Consensual validation was reached for Sri Lankan context through interviews with seven experts. Information on supportive institutional activities were gathered through the check list of IASCGC by the Principal investigator. The responses

to the items of CGCQ was rated from 1 to 5 and individual mean values were calculated to build a composite variable across all items of six 2 actors. The CGC value was calculated for overall sample, for hospitals, for individuals and for each six factor. The AGC values were considered as supportive of VG when the score was more than 2.5. Comparison of values was done between factors and hospitals. Statistical analysis was performed to identify influential sociodemographic factors and Institutional factors. Results and discussion There were 346 respondents and the response rate was 81.8 percent. Overall CGC value was .169 (95% CI 3.12-3.22). Values obtained by BHb Theldeniya, BH Gampola and by DGH Nawalapitiya were .32, 3.15 and 3.11 respectively. The CGC values of 320 respondents (92.5 %) were supportive of CG. A Significant difference of VG was observed between hospitals (31= 4.92. P=0.008). The six factors of CXC were significantly correlated to CGC Supportive CGC was significantly high among females and among nursing officers.

Conclusions and Recommendations : Overall CGC was supportive. The concepts of CG can be integrated to health care delivery system of similar hospitals. CGC of DGH Nawalapitiya was comparatively low. There is a requirement to strengthen the Quality improvement initiatives for employees of DGH Nawalapitiya. Activities related to clinical audits should be strengthened in All hospitals

Keywords: Clinical Governance Climate, Clinical Governance, Healthcare Governance.

0112. Wijewickrama, B.A.O.

Patient experience on the delivery of healthcare at the National Institute of Mental Health, Sri Lanka.

MSc. Medical Administration – 2018

D 4857

Patient experience is defined as “the sum of all interactions, shaped by organization’s culture, that influence the patient’s perceptions across the continuum of care”. Healthcare is defined as the organized delivery of medical care to individual or the community. National Institute of Mental Health, Sri Lanka is a specialized hospital catering only for patients with mental illnesses has a unique system developed internally to provide services for such patients. Measuring patient experience is increasingly becoming important around the world. It is considered as a tool to measure the quality of services and the clients’ perception about the services provided.

The study was a hospital based descriptive cross-sectional study. The patient

experiences were captured through an interviewer administered questionnaire for inward patients and their OPD waiting time data was captured through secondary data extraction. The experience of outpatients was captured through in-depth interviews of selected clients. Total of 419 inward patient information and ten outpatient information were accepted for analysis.

The socio demographic variation within the inward participants of the study revealed several vulnerabilities inherent in the population including poor social support and less income. There were relatively more males, more Sinhalese Buddhists within the participants who were from the western province.

The OPD waiting time and the total time spent at the OPD were within set guidelines of the institution however there was considerable variation and some high values. Overall experiences in inward care including the services of senior doctor (85.05%), ward doctor (84.72%), nursing (84.97%), health assistant (81.33%), pharmacy (90.22%), occupational therapist (81.84%), and psychiatric social worker (84.12%) were positive. Communication about the illness, treatment or a procedure by the and nursing services seem to have some drawbacks. Patients having access to pharmacy, occupational therapy and social worker services are limited. Involvement of the family in the care plan also has some notable negative experiences. Overall experience seems vary between different income level.

Overall experiences regarding environmental factors remain positive (82.61 %) with some significant negative experiences regarding palatability of food, place for recreation and ability to contact family. Environmental factors show highest correlation to overall experience.

Outpatient services experience also shown to be very much positive with few areas of improvement noted by the participants. Important finding is how positive the participants felt about having the counselling and psychotherapy services. They were very much in favour of expanding the outpatient services.

Keywords: Patient experience, Mental Health

Medical Microbiology

0113. Chinthamani, P.R.

Laboratory diagnostic methods comparison, antibiotic susceptibility pattern and serotyping of invasive and colonizing group B streptococcus (GBS) isolates at a selected group of hospitals in Sri Lanka.

MD Medical Microbiology – 2019

D 4894

Introduction: GBS cause significant morbidity and mortality in neonates, pregnant women and patients with underlying comorbidities. Intra-partum antibiotic prophylaxis (IAP) is currently the mainstay of prevention of neonatal GBS disease and effective vaccine against invasive GBS disease is under clinical trial.

Objectives : To validate GBS laboratory diagnostic methods and to describe antibiotic susceptibility pattern (ABST) and serotypes of GBS.

Methodology ; Study was a descriptive cross sectional study and isolates which were identified as GBS from high vaginal swabs (HVS) and sterile body sites were collected from selected hospitals. Collected isolates were subjected to phenotypic identification tests including CAMP which is described by Christie, Atkins and Munch-Peterson, bile aesculin hydrolysis (BE) and Lancefield grouping test. ABST (CLSI-disk diffusion) and serotyping by latex agglutination (ImmuLex™ Strep B) were performed on confirmed GBS isolates by Lancefield grouping test.

Results : Of 145 collected isolates 137 isolates were confirmed as GBS by Lancefield grouping test. Compared to the Lancefield grouping test, CAMP test showed 100% sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV). Sensitivity, specificity, PPV and NPV of the negative BE test were 99.27%, 25%, 95.77% and 66.66% respectively. Penicillin and cefotaxime were 100% Sensitive against tested GBS isolates. Sensitivity of clindamycin and erythromycin were 74.4% and 76.6% respectively. Serotype III was the most predominant in invasive GBS isolates followed by serotype Ia, Ib, VI, II and V. Serotype VI was the most predominant in HVS isolates followed by serotype III, V, Ia, II, Ib and IV.

Conclusion : CAMP test has 100% sensitivity, specificity, PPV and NPV in GBS identification. Surveillance on clindamycin susceptibility is important to predict the empiric antibiotic in IAP. Serotype distribution is closer to other countries and is an advantage in future vaccine introduction. GBS vaccine currently under

clinical trial (Ia, Ib and III) is potentially effective for preventing 73% of the invasive GBS disease of infants in study population.

0114.Devakanthan, B.

Optimization of a multiple PCR for the detection of pathogens causing acute bacterial meningitis.

MD Medical Microbiology – 2019

D 4887

Background : The lack of rapid, sensitive laboratory diagnostic methods remains a key diagnosing meningitis. Despite advancements in technology, affordability PCR most developing countries from using the newer techniques. However, convenient PCR is currently becoming more affordable.

Objectives : To optimize a multiplex PCR for the laboratory detection of common pathogens causing bacterial meningitis and utilize it to identify the causes of meningitis.

Methods : Cerebrospinal fluid (CSF) specimens were collected from patients with meningitis admitted to Teaching Hospital, Peradeniya from December 2016 to March 2017. Clinical data were gathered using a data entry form. A multiplex PCR was developed using previously described primers to detect *Neisseria meningitidis*, *Streptococcus pneumoniae* and *Haemophilus influenzae*. The PCR was optimized using known controls, adjusting primer concentrations, $MgCl_2$ concentration and annealing temperature. External validation was not conducted due to time and financial constraints. Routine laboratory tools and optimized PCR were use on the collected CSF specimens.

Results : Eighty specimens of CSF were collected during the study period. The mean to sample collection was 4.78 (SD2.6) from onset of symptoms.

None of the samples yielded a bacterial growth by routine culture. CSF antigen detection was performed on 50 specimens and all were negative. Of the total samples, eight yielded positive PCR results. In two of the positives, the full report was normal, one was suggestive of viral aetiology and five were suggestive of bacterial aetiology. Three were positive for *S.pneumoniae* and five for *H. influenza*. Positive PCR results were associated with a shorter time gap between hospitalization and sample collection and a larger CSF volume.

Conclusions: PCR is useful in the identification of the bacterial aetiology of acute meningitis. Diagnosis may be improved by collection of an adequate volume of CSF early in the illness, without delay.

0115.Diyalagoda, D.P.K.E.

Blood stream infections following trauma admitted to trauma intensive care setting at the National hospital of Sri Lanka.

MD Medical Microbiology – 2019

D 4892

Introduction : Trauma is one of the leading causes of morbidity and mortality of hospitalized patients worldwide. According to Sri Lankan situation, morbidity is higher than mortality. Objectives were to find the rate of bacteraemia among trauma patients, organisms responsible with their susceptibility pattern and associated factors for culture positive blood stream infections.

Methods : A descriptive cross-sectional study carried out for four months in two accident service intensive ICUs and three neurotrauma ICUs at the NHSL. Patient's demographic and clinical details were extracted from clinical notes and blood cultures were sent according to CDC criteria, positive blood cultures were processed according to the SOPs.

Results : During the study period, 251 patients admitted and blood cultures were obtained from 172 patients. Forty six blood cultures indicated positive with 7 contaminants, 16 line colonizers and 23 significant positive blood cultures in which 5 denoted as secondary bacteraemia and 18 primary bacteraemia. Culture positive bacteraemia rate among trauma patients was 9.2%. Majority of Gram positive isolates were Enterocci (4/7) whereas *Acinetobacter calcoaceticus* (8/13) comprised majority of Gram negative organisms. All Gram positive organisms were sensitive to vancomycin, teicoplanin and linezolid whereas all Gram negatives were sensitive to colistin.

From 12 demographic and clinical parameters and 10 laboratory parameters 6 factors found to be significantly associated with culture positive bacteraemia. Admission to an accident service ICU (Odds ratio 2.521, 95% CI 1.036-6.138), ICU admission for >5 days (Odds ratio-5.340 with 95% CI 1.881-15.164), ISS >25 (Odds ratio 4.992, 95% CI-1.877-13.272), haemoglobin concentration <10 g/dl (Odds ratio- 3.102 with 95% CI-1.266-7.603), albumin concentration of <30g/L (Odds ratio- 6.021 with 95% CI 2.31-15.696) and AST level >3 times normal

(Odds ratio-2.660 with 95% CI 1.049-6.745) have associations with bacteraemia.

Conclusion : *Acinetobacter* and *Enterococcus* species were common among blood culture isolates. Admitting to accident service ICU, with severe injury (ISS> 25) for more than 5 days would predict culture positivity. If blood haemoglobin is low (<10g/dL), AST level high (>3 times normal) with low albumin level (<30g/L) chances of culture positivity would increase remarkably. Follow up of patients to get final outcome and associations with mortality among trauma patients in the country are the areas for further research.

0116.Galagedara, W.D.

Analysis of the aerobic bacterial flora in chronic wounds and the effect of locally applied acetic acid in an outpatient setting.

MD Medical Microbiology – 2019

D 4891

Introduction : Chronic wounds are mainly a problem in the elderly, increasing the burden on the healthcare system of a country and affecting the quality of life of the individual patient. Knowledge on the microbial profile of chronic wounds is important in effective management.

Objective : The study was designed to describe the aerobic bacterial flora in chronic wounds and to identify the pattern of aerobic bacterial flora isolated from the chronic wounds in relation to the associated risk factors. Describing the effect of locally applied acetic acid on chronic wounds was also an objective of the study.

Methodology : A descriptive, cross sectional study was carried out in three selected health care institutions in Colombo, Sri Lanka from December 2017 to March 2018. Samples were collected from 196 patients, with chronic wounds more than three months duration. Patients on systemic antibiotic for previous seven days and antiseptic dressings for previous three days were excluded. Out of the 196 patients, those decided by the clinicians to provide acetic acid treatment were included in the acetic acid component of the study. Patients who were given systemic antibiotics during the period of follow up were excluded.

Results: Majority was male 123 (62.76%). Mean age was 61.63 years. Mean duration of wounds was 17.55 months. Most wounds were preceded with cellulitis (61.2% - 120). Fifty point five percent (99) of wounds were polymicrobial. Total number of patients with diabetes, varicose veins, eczema and chronic lymphedema

were 78(39.7%), 52(26.53%) a 33(16.83%), 4 (2%) respectively.

Out of total 302 isolates, majority were *Staphylococcus aureus* (39%- 116). Isolated *Pseudomonas* species were 32% (97). Coagulase negative *Staphylococcus* species, Coliform species and *Streptococcus* species were 12% (37),9% (28)and 3% (8) respectively.Out of the 116 isolates of *Staphylococcus aureus* ,59%(69) were MRSA.*Staphylococcus aureus* (57.7%) and *Pseudomonas* spp (53.8%) are the commonest microorganisms isolated in chronic diabetic wounds.

Conclusion: There is a statistically significant association between chronic wounds with varicose veins and *Staphylococcus aureus* and MRSA. A positive effect on wound regeneration and reduction of microbiological flora with 1% acetic acid was observed. Further in vivo studies required to determine the percentage of acetic acid and frequency of acetic acid application.

0117.Gunarathe, M.N.T.D.

Microbiological assessment of the effectiveness of the current decolonization procedure using rotational antiseptics among burn patients admitted to the National Hospital of Sri Lanka.

MD Medical Microbiology – 2018

D 4850

Introduction: Knowledge of common microorganisms and their antibiograms is important in managing bum wound infection in hospitalized bum patients. Decolonization procedure using rotational antiseptics is thought to be effective in preventing bum wound infection.

Objectives: This study was designed to assess the effectiveness of the decolonization procedure using rotational antiseptics and to identify microorganisms that infect/colonize bum wounds and their antibiograms and factors associated with colonization/infection of bum wounds.

Methodology: A cross sectional study was carried out at the Bums Unit of the National Hospital of Sri Lanka from December 2016 to March 2017. Thirty two patients were recruited using convenience sampling excluding those managed in other centres, underwent skin excision and grafting, had been on parenteral antibiotics and in whom other antiseptics were used. When bum wound infection/colonization was evident clinically, wound swabs were collected and antiseptic cycles were started. One cycle comprised of 3 pre-determined

antiseptics namely acetic acid, Milton and povidone iodine. Swabs were collected after completion of each cycle until clearance of organism from the site. All swabs were processed according to standard operating procedures.

Results: From 148 swabs which were obtained from 51 sites of 32 eligible patients, 58 organisms were isolated. *Pseudomonas* spp. was the commonest (31.05%) followed by equal number of *Staphylococcus* spp, coliforms and *Acinetobacter* spp. *Pseudomonas* spp and coliforms were sensitive to first line antibiotics. Antibiotic resistance was high among *Acinetobacter* and *Staphylococcus*. *Pseudomonas* spp needed 3 cycles of decolonization to clear while other 3 species needed 2 cycles. Due to the small sample size and the selected population, factors associated with colonization/infection of bum wounds were not ascertained.

Conclusions: *Pseudomonas*, *Staphylococcus*, coliforms and *Acinetobacter* species were common in bum patients of this setting. Wound swabs can be repeated after completion of 2 or 3 cycles of rotational antiseptics according to the organism rather than routinely obtaining swabs after each antiseptic cycle. To describe factors associated with bum wound infection, separate study design is needed.

0118.Liyanage, I.A.

Preliminary study to evaluate the trough vancomycin levels among patients who are on vancomycin for methicillin resistant staphylococcus aureus infections and to determine minimum inhibitory concentrations of vancomycin in these MRSA isolates in selected hospitals.

MD Medical Microbiology – 2019

D 4869

Introduction: Vancomycin is a first line antibiotic used to treat infections with methicillin-resistant *Staphylococcus aureus* (MRSA). To achieve the maximum benefit of the drug and to prevent the toxicity and resistance development, therapeutic drug monitoring is recommended where trough serum level is considered the best predictor of efficacy. For complicated infections with MRSA, a trough of 15-20 mg/L is recommended.

Objectives: To determine the trough serum levels and proportion of patients who achieved therapeutically adequate trough serum level of vancomycin and to determine the minimum inhibitory concentrations (MICs) of those MRSA isolates.

Methods: This study is a descriptive cross sectional study with non-probability sampling for four months duration starting from December 2017 at Teaching Hospital Karapitiya, Colombo South Teaching Hospital and Teaching Hospital Ratnapura. Trough serum vancomycin levels were measured immediately before the fourth dose using a chemiluminescent microparticle immunoassay at the Medical Research Institute- Colombo in patients who were on vancomycin empirically or as targeted therapy for MRSA infections. MIC of the MRSA isolates were determined using vancomycin E- strips.

Results : Out of the 39 patients who had complicated infections with MRSA, only 25.6% achieved a desirable trough level of 15-20 mg/L. Resistance driving trough levels were achieved by 23.1% and 38.5% had toxic trough levels. Out of the 18 patients who had non-complicated infections 44.5% achieved a desirable trough level of 10-20 mg/L. Resistance driving trough levels were achieved by 33.3% of the patients with non-complicated infections and 22.2% had toxic trough levels. Trough serum vancomycin levels showed a statistically significant negative correlation with creatinine clearance ($p = 0.000$) and a positive correlation with age ($p = 0.002$). All the 18 MRSA isolates were sensitive to vancomycin.

Conclusion: Trough serum vancomycin levels are frequently sub therapeutic even if the patients receive an adequate dose of vancomycin according to the body weight and serum creatinine. This possesses a threat of therapeutic failure, development of undesired effects of the drug and development of resistance to the drug.

0119.Priyadharshana, W.B.U.

Prevalence, antibiotic sensitivity pattern and genetic analysis of extended spectrum beta lactamase producing *Escherichia coli* and *Klebsiella* spp among patients with community acquired urinary tract infection in Galle district, Sri Lanka.

MD Medical Microbiology – 2018

D 4848

Introduction :Community acquired urinary tract infections (CA-UTI) are mainly caused by *Escherichia coli* and *Klebsiella* spp which inducible extended spectrum beta lactamase (ESBL) producers. Study of pathogens in such infections may help to establish antibiotic guidelines in the out-patient setting.

Objectives: To determine, the prevalence of ESBL producing *E. coli* and *Klebsiella* spp in CA- UTI characteristics of the ESBL producing organisms

including resistance genes and factor associated with infection with ESBL producers.

Design, setting and methods: A descriptive cross-sectional study was done at the out-patient department of a tertiary care hospital and at 10 selected general practitioners' centers. Following written consent and administration of an interviewer-based questionnaire, urine samples were collected from clinically suspected CA-UTI patients. Significant isolates were identified and antibiotic sensitivity (ABST) were done according to the standards methods. ESBL genes were identified by Conventional multiplex PCR.

Results: Positive cultures were seen in 178 (38%) urine samples of total 465 patients. Most positives from females (103/58%). Predominant isolate was *E. coli* (149, 84%) with 68% ESBL producers followed by 16 (9%) *Klebsiella pneumoniae* with 4 (25%) ESBL producers. ESBL pathogens had high resistance rates for quinolones present (41%) but 80% sensitivity to nitrofurantoin, fosfomycin, mecillinam, aminoglycosides and carbapenems. ESBL genes included were 83% CTX-M, 71% OXA, 24% TEM and 9% SHV with one more than one gene in 29 isolates (71%). Haematuria was significantly associated with ESBL production ($p < 0.01$). Out of risk factors tested, there was "significant association between structural abnormalities the urinary tract and increased" ESBL CA-UTI ($p < 0.01$).

Conclusions: ESBL prevalence was 40% in CA-UTI with *E. coli* predominance. More than eighty percent of ESBL organisms show high sensitivity to aminoglycosides, carbapenems, nitrofurantoin, mecillinam and fosfomycin. The most frequently isolated ESBL gene was CTX-M. Haematuria and structural abnormalities of urinary tract were significantly associated with ESBL CA-UTI.

0120. Ranasinghe, R.A.T.K.

Rate of positivity, associated factors and phenotypic detection of AmpC beta lactamase among clinical isolates of *E. coli*, *Klebsiella* and *Proteus* species at the National Hospital of Sri Lanka.

MD Medical Microbiology – 2018

D 4895

Introduction: Plasmid-mediated AmpC beta lactamases which are derived from chromosomally encoded genes in *Enterobacteriaceae* have been described in certain bacterial species like *E. coli*, *K. pneumoniae* and *Proteus mirabilis*. They confer resistance to penicillins, narrow-spectrum cephalosporins, oxyimino-p-lactams, and

cephamycin. They lack susceptibility to beta-lactamase inhibitors such as clavulanic acid, sulbactam, and tazobactam.

Objectives : To describe the rate of positivity and associated factors for AmpC beta-lactamase production in *Enterobacteriaceae* and to describe the AmpC/ ESBL co-existence, in the National Hospital of Sri Lanka, and to compare the phenotypic methods for AmpC detection.

Methodology : A total of 141 isolates of *Escherichia coli*, *Proteus* species and *Klebsiella* species were identified using a rapid identification system (Remel RapID ONE-USA). All isolates were tested for AmpC production using two screening tests and four confirmatory tests as described in the literature. They were compared with the test which had the highest specificity, cefoxitin-cloxacillin double disc test with 100% specificity and 97.2% sensitivity. ESBL producers were detected according to the CLSI-2016. Patients' demographic and clinical details were collected using a data extraction sheet.

Results : Out of 141 isolates 34 (24.11%) were AmpC producers. Twenty six percent of blood cultures isolates and 14.8% isolates from the other samples were positive. AmpC and ESBL co-existence was found to be 20.6% of the total isolates and 31.87% of the ESBL positives. Being in an ICU, having a hospital acquired infections and presence of recurrent infections or recurrent hospitalizations showed statistically significant co-relation with AmpC production ($P < 0.05$).

The Cefoxitin disc test showed 100% sensitivity and cefotetan disc test showed 91.18% sensitivity. They both had 95.33% specificity. Out of the confirmatory tests EDTA disc test had the highest specificity of 100% with 91% sensitivity and cefoxitin and cefotetan - boronic combination tests gave an equal specificity 99% with 100% and 91% sensitivity respectively.

Conclusion : A high prevalence of AmpC beta lactamases production in *Enterobacteriaceae* is observed in the clinical setting. AmpC co-exists in about one third of ESBL positives. Cefoxitin is a better screening test and EDTA test is a good confirmatory test for AmpC.

0121 .Shanthakumara, W.D.D.I.

Invitro efficacy of alternative antibiotic agents for multidrug resistant enterobacteriaceae urinary isolates and associated factors for multi drug resistance among patients with UTI in a provincial Tertiary Care Hospital.
MD Medical Microbiology – 2019 D 4890

Introduction: The global increase of multi-drug resistant *Enterobacteriaceae* infections has emphasize the necessity of alternative first-line therapy for UTIs. Fosfomycin, pivmecillinam and once daily parenteral ertapenem are effective for UTI caused by most of the MDRE. Knowing whether the infection is acquired in the hospital or community and associated factors for MDRE infections would be beneficial in guiding empiric therapy. This study was carried out to evaluate in-vitro susceptibility of MDRE uropathogens to fosfomycin, pivmecillinam and ertapenem.

Objectives : To describe in vitro efficacy of fosfomycin, pivmecillinam, and ertapenem for hospital acquired and community-acquired MDRE uropathogens and to identify associated factors for UTI by MDRE.

Methodology : Urine samples of symptomatic in and out-patients with UTIs received to microbiology laboratory of TH Ratnapura for culture, during a period of four months were processed according to laboratory manual SLCM. Presumptive coliforms with a pure growth of $>10^5$ CFU were tested for sensitivity to commonly used antibiotics according to CLSI - 2017 guidelines. Organisms with resistance to at least a single agent of three or more classes of antibiotics were identified to species level using the RapID ONE system. Antibiotic sensitivity testing and interpretation of the MDRE for fosfomycin, pivmecillinam, and ertapenem were performed according to CLSI 2017 extrapolating *Escherichia coli* break points to include all Enterobacteriaceae.

Results : Out of 145 MDRE isolates, *Escherichia coli* accounted for 109 (75%), 29 (21%) were *Klebsiella pneumoniae*, and there were 6(4%) other species, and most were from males 75 (51.7%). The sensitivity of all MDRE for nalidixic acid, co-amoxiclaw, \cephalosporin, ciprofloxacin and co-trimoxazole was 5%, 6%, 6.8%, 15% and 20% respectively but nitrofurantoin had 68% sensitivity. The sensitivity of all MDRE for fosfomycin, pivmecillinam, and ertapenem was 98%,

91%, and 84.8% respectively. *Escherichia coli* 99% and 93% *Klebsiella pneumoniae* were sensitive to fosfomycin. Pivmecillinam sensitivity of *Escherichia coli* and *Klebsiella pneumoniae* was 93% and 79%, while ertapenem sensitivity to *Escherichia coli* and *Klebsiella pneumoniae* was 91% and 58.6% respectively.

Conclusions : Most oral empirical antibiotics for UTIs showed >80% resistance to MDRE uropathogens but >90% sensitivity to fosfomycin and mecillinam which therefore are promising alternatives for UTI treatment. As a first line carbapenem 15.2% resistance to ertapenem in MDRE was an alarming sign.

Keywords: Urinary tract infections, *E. coli*, Multidrug-resistant, Enterobacteriaceae, Fosfomycin, Pivmecillinam, Ertapenem.

0122. Sigera, L.S.M.

***Bordetella pertussis* specific immunoglobulin G antibody levels among asymptomatic individuals aged 4-24 years admitted to two selected hospitals in Sri Lanka.**

MD Medical Microbiology – 2014

D 4849

Background: Pertussis continues to circulate in the community & cases among adolescents and adults have been increasing. Waning of pertussis specific immunity following natural infection or immunization may contribute to the persistent circulation. Even though it is not included in the extended programme of immunization in Sri Lanka, the booster doses including the adolescent booster dose of dap, (acellular pertussis) are included into the list of recommended immunizations in several countries. Information on immunity to pertussis in this age group is needed before any vaccination policy can be considered.

Objectives: This cross sectional study is to determine the antibody levels against pertussis to determine the need and optimal age and frequency for booster immunization.

Methods: The quantitative determination of specific IgG antibodies to *Bordetella pertussis* toxin was done using a validated ELISA method which uses the value of <55 IU/ml, 55-60 IU/ml, 60-125 IU/ml, >125 IU/ml as negative, borderline, positive, strongly positive, respectively. Sera of 385 asymptomatic individuals aged 4-24 years admitted to surgical units of Lady Ridgeway Hospital, Colombo and Colombo South Teaching Hospital, Kalubowila were used for the study. Mann-Whitney U test and Kruskal-Wallis test were used in analysis of results and $p < 0.05$ was taken as significant. Epidemiologic variables were collected by a questionnaire

and analyzed for correlation with presence of absence of significant levels of pertussis antibody.

Results: Median age was 12 years (IQR 8-19) with 212 (55.1%) females. The median (IQR) anti PT antibody level was 3.31 IU/ml (0.73-15.12) and 352 (91%) had anti PT levels <55 IU/ml. Median (IQR) of anti PT levels were 3.18 IU/ml (0.591-8.00) for 4-7 years, 1.43 IU/ml (0.336-6.27) for 8-11 years, 4.28 IU/ml (0.978-13.39) for 12-15 years, 6.14 IU/ml (1.44-63.25) for 16-19 years and 4.89 IU/ml (1.11-16.78) for 20-24 years and the differences were statistically significant ($p=0.000$). Females ($p<0.003$) and those having a sibling aged >12 years ($p=0.017$) had significantly higher anti PT levels.

Conclusion: The majority of the study population, especially 8 to 11 years age group had very low anti PT IgG levels. The infection may occur in early adolescence. A booster dose of RI cellular pertussis vaccine may be considered during adolescent.

0123.Sugathadasa, M.R.D.N.

Degree of compliance of health care workers on central catheter care bundle and its effect on central line associated blood stream infection (CLABSI) at medical intensive care unit (MICU) at the National Hospital of Sri Lanka (NHSL).

MD Medical Microbiology – 2019

D 4889

Introduction: Central line associated blood stream infections (CLABSI) is one of the commonest causes of hospital acquired bacteremia and septicemia. It is evident that adherence to central line (CL) bundle care practice is associated with a significant reduction in the CLABSI rate.

This study aims to identify the CLABSI rate and the degree of compliance of healthcare workers on CL bundle care components, assess the effect of the CL bundle care compliance on the rate of CLABSI and the common causative pathogens, their antibiotic susceptibility pattern at MICU in NHSL.

Method : A descriptive cross sectional study was conducted recruiting patients with CL, which was inserted only at MICU and kept for more than 48 hours after insertion. The CLABSI data were collected using same methodology introduced by the CDC and NHSN. Both insertion and maintenance bundle care checklists were prepared according to the CDC/NHSN guidelines and were used to observe the compliance of CL bundle care. Blood cultures and CL tip cultures were processed

using BACTEC and BD phoenix TM automated ID/AST systems. A total of 69 patients were included over four months from December 2017 to March 2018.

Results: Central line insertion bundle compliance rate of hand hygiene, wearing a sterile gloves and gown were 100% and least compliance (53.6%) was observed with the covering the patient head to toe using sterile drape. Maintenance bundle compliance rate for all components were 100% throughout the study. Overall CLABSI rate at MICU was 23.66/1000 CL days. It is observed that with the improvement of CL bundle compliance from 30% to 86.6% there was reduction of the CLABSI rate from 30/1000 CL days, reaching zero/1000 CL days at the end of the study and had strong correlation ($r = - 0.953$) and P value was 0.047.

A total 8 CLABSI episodes, 75% were Gram negative bacilli and 25% were Gram positive organisms, 37.5% *Elizabethkingia meningoseptica* 25% *Acinetobacter baumannii*. Most of the isolated organisms were multi drug resistant.

Conclusion: Higher CL bundle compliance rate is associated with lower CLABSI rate. Regular training programs and audits should be conducted to continue the higher compliance rate.

Keywords: BSI (blood stream infections), CL (central line), 1000 CL days. CLABSI (central line associated blood stream infections), HAI (Health care associated infections), IHI (Institute of health care improvement

0124. Thabrew, H.H. P.M.J.

Determinants and characteristics of candida colonization among patients admitted to Intensive Care Units of Teaching Hospital Karapitiya.
MD Medical Microbiology – 2017 D 4851

Introduction : Candidaemia is an infection with a high mortality rate which ranks at the fourth place among hospital acquired infections. The main reasons for the high mortality are delay in initiation of antifungal therapy or treatment with an ineffective antifungal. Ability to predict this infection gives a significant advantage for the clinician by pre-emptive treatment and reduce mortality.

Methodology : Study was conducted on neonatal, paediatric and adult ICUs of the main teaching hospital in the southern province of Sri Lanka. Screening specimens of oral, rectal Central Venous (CV) line swabs and urine and other available sterile fluids were collected from admission and every third day until discharge, death or development of Candidaemia in the patient. Candida Colonization index, Corrected

Candida Colonization index, Candida score and a new Candida score according to the identified risk factors was calculated for each patient.

Results : Out of the 100 patients who developed colonization 10 patients developed Candida blood stream infection. Presence of Sepsis, presence of a Gastro Intestinal (GI) infection or surgical procedure, number of antibiotics given, CV line colonization and density of rectal, oral and urine colonization, and change of species of colonizing Candida was significantly different among the infected and non-infected groups. Candida score and New Candida score had 100% sensitivity and the highest specificity of 94% was given by Corrected Candida Colonization index.

Risk factors identified by the study were similar to other studies conducted in Europe and USA except for CV line colonization and change of colonizing Candida species which were not identified as risk factors in previous studies.

All the indexes and scores had excellent sensitivity and negative predictive values. However none of the scores had good specificity except for Corrected Candida colonization index.

Conclusion : Combination of Corrected Candida Colonization index, Candida Score or the new Candida score formulated for the study sample could reliably predict Candidaemia. Presence of Sepsis, presence of a **GI** infection or surgical procedure, number of antibiotics given, CV line colonization and density of rectal, oral and urine colonization and change of colonizing species of Candida were identified as risk factors for Candidaemia for the study sample.

0125.Waniganayake, Y.C.

Use of real time PCR in urine samples for detection of pathogenic leptospira species in early disease.

MD Medical Microbiology – 2019

D 4893

Introduction: Leptospirosis is a zoonotic disease endemic in Sri Lanka. Early diagnosis of leptospirosis can be a challenge with its non-specific clinical presentation. However, rapid detection is crucial in the management as sinister complications can be minimized with early and appropriate antimicrobial therapy. Timely laboratory diagnosis of leptospirosis still remains a challenge because of different limitations in the currently available tests.

Methodology: Adult patients from three hospitals in Colombo district, Sri Lanka with clinically suspected leptospirosis during the first seven days of fever were recruited. A blood and a urine sample were collected simultaneously from patients.

DNA was extracted from samples and real time PCR (rtPCR) was performed using *lipL* 32 primers. MAT results were traced. Analytical sensitivity and specificity of the PCR assay was calculated using known positive and negative controls.

Results: Total of 125 patients were included into the study and their mean age was 47 years. Real time PCR in urine samples had a diagnostic sensitivity of 52.08%, diagnostic specificity of 86.21%, positive predictive value of 92.59% and negative predictive value of 35.21 %. There was a significant reduction of urine rtPCR sensitivity in patients with jaundice. The overall diagnostic sensitivity of blood rtPCR was 82% and its sensitivity was reduced from the 5th day of fever. A significant association was not seen with antibiotic use and rtPCR results of blood and urine in this study.

Discussion: The diagnostic sensitivity and specificity of rtPCR in urine samples was similar to some previous studies with high sample numbers. The lower sensitivity of urine rtPCR may have been due to PCR inhibitors like bilirubin present in urine. The reduction in sensitivity of blood rtPCR from 5th day of illness was noted in previous literature as well. The diagnostic sensitivity of blood rtPCR was higher than the findings of previous Sri Lankan studies.

Conclusion: Urine rtPCR may become useful for early diagnosis of leptospirosis during the first week especially from the 5th day of fever when the blood PCR sensitivity is known to fall.

0126. Weeakoon, D.N.

Diversity of beta lactamases among gram-negative blood culture isolates of patients presenting with urosepsis in a tertiary care hospital.

MD Medical Microbiology – 2019

D 4888

Background: Urosepsis has contributed for nearly 25% of sepsis burden. The key characteristics which had contributed to negative outcome were the, virulence factors and multiple antibiotic resistance features expressed in common uro-pathogens. Expression of different types of beta-lactamases in uro-pathogens is considered the most important resistance mechanism.

For antibiotic stewardship, elucidation of these resistance characteristics is mandatory, but not routinely undertaken in most diagnostics laboratories in Sri Lanka.

Objectives: This study aimed to describe the diversity of the beta lactamases in Gram -negative bacteria of urosepsis isolated from teaching hospital Kandy. The research also aimed to utilize the Advanced Expert System (AES) in commercial platform (VITEK® 2) and commercial combined discs (Mast® discs) in predicting the existence of different types of beta lactamases among the target isolates.

Method: The research was conducted as a laboratory based descriptive study over period of 4 months. 47 Gram negative blood culture isolates obtained from eligible patients with clinically and ultrasonically suspected bacteremic uro-sepsis were analyzed. All isolates were identified to the species level with antibiotic sensitivity and MIC using VITEK 2 platform. Resistance mechanisms against beta lactamases were extrapolated using the MIC values and AES data. Then isolates were tested for differential expression of beta lactamases using 4 commercial combination discs according to manufacturer's instructions. For all tests recommended standards and QC parameters were used as described by manufacturers.

Results: The main uropathogens identified during study were: *Escherichia coli* (n= 29, 62%), *Klebsiella pneumoniae* (n= 11, 24%), *Enterobacter cloacae* (n=3, 6%), *Serratia marcescens* (n=2, 4%), *Proteus mirabilis* (2%) and *Pseudomonas aeruginosa* (2%). According to AES and MIC interpretations, 42.5% of the isolates were ESBL producers. 23.4% of the isolates were probable carbapenemase producers. Altogether there were 6 (12.7%) probable Amp C producers. There were only 2 isolates which demonstrated wild type phenotype. With combined discs, there were 20 ESBL producers and 2 Amp C producers together with 3 ESBL and Amp C co-producers. There were 3 metallo beta lactamase producers and 19 showed no demonstrable resistance mechanisms with commercial disc method.

Conclusion: This study suggested that Gram -negative bacteria causing urosepsis, produce a wide variety of beta lactamase enzymes which is diverse. Nearly 50% of the Gram -negative isolates causing urosepsis are ESBL producers, MIC distributions predict high rates of Amp C and carbapenemase producers among Gram –negative isolates causing urosepsis and combination discs demonstrated low rates of Amp C and carbapenemase producers.

Keywords: Urosepsis, Beta lactamases, AES of Commercially available platforms (VITEK 2®), Commercially available combined discs (MA

Ophthalmology

0127.Pathirage, S.N.

Significance of pre operative para –hole retinal sensitivity as a predictor of postoperative visual outcome after anatomically successful macula hole surgery.

MD Ophthalmology – 2019

SC 05

Background : Idiopathic Full thickness Macula hole is an important cause of central vision loss and metamorphopsia in middle aged and elderly predominantly affecting women. Current standard treatment with vitrectomy combined with internal limiting membrane peeling and gas tamponade results in more than 90% anatomical success rate. However post-operative visual acuity varies among patients and does not improve to normal. Predicting post-operative visual acuity is something patient keen to know pre-operatively. This study aims to assess whether there is an association between pre-operative para hole retinal sensitivity and post-operative visual acuity.

Methods : Prospective descriptive study was conducted in 86 patients surgery for macula hole repair. Preoperative visual acuity, age of patient, minimum hole diameter, base diameter and para-hole retinal sensitivity using focusing beam of pascal laser were assessed in all patients preoperatively. All patients underwent standard 25 gauge vitrectomy, dual blue assisted internal limiting membrane peeling and C3F8 gas tamponade. Patients were followed up postoperatively at day 1, two weeks, two months and one year to assess post operative visual outcome. Anatomical success rate of surgery was assessed with OCT macula to see the closure of macula hole. Multiple regression analysis was used to assess correlation between Post-operative visual acuity and pre-operative variables.

Results : Majority of patients were females (77%) and age of patient ranged from 50-85 years. Eighty out of 86 patients had anatomically successful surgery after 2 months. Most of the failed surgeries were large macula holes (83%). Small macula holes had 100% anatomical success. Pre-op visual acuity, minimum hole diameter, base diameter and para hole retinal sensitivity measured with laser spot size had a positive correlation with post-operative visual acuity. In multiple regression analysis laser spot size was strongly correlated with post-operative visual acuity at 1% level.

Discussion: Macula hole surgery had overall 93% anatomical success rate. Small holes had 100% anatomical success. Failures were associated with large holes. Since there is a strong association between post-operative visual acuity and parahole sensitivity, re-operative assessment of para hole retinal sensitivity can be used as a predictor of post-operative visual acuity in patients undergoing surgical treatment for macula hole repair.

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