Oral Presentations

Day 1: 19th September 2019, 8:30 am - 10:30 am, Oak Room 1

FREE PAPER SESSION 1: UNIVERSAL HEALTH COVERAGE

Chairpersons : Prof. Upul Senarath   **Dr. Anil C. Mathew**

OP 001

Determinants of out-of-pocket health care expenditure in Sri Lanka: From Diagnosis to Reforms

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Background: Out-of-pocket-expenditure (OOPE) is rising and currently, remains at 51% (2016) of the current health expenditure of the country. High out-of-pocket expenses for healthcare have been shown to impede seeking healthcare, health status and quality of life. It can drive families towards impoverishment and threaten equity in healthcare. An effectively conducted Root-cause-analysis (RCA) could help to identify determinants of inefficient healthcare performance leading to high OOPE.

Aims: To identify determinants of high out-of-pocket expenditure for modifiable and impactful policy options

Methods: A root-cause-analysis (RCA) was conducted to obtain a deep insight into high OOPE as it would help policy-makers know the origin of the question through which prioritization of the modifiable causes can be undertaken. Extensive literature search and exploration of available data and statistics i.e. Household Income and Expenditure data (HIES), Global Health Expenditure Database (GHED) and brain storming were utilized to identify the root causes. Later the root-causes were grouped into categories. The identified root causes were then categorized using the "TPN system" (TPN: totally, partially and non-modifiable). The root-causes that would have the greatest impact once modified were identified, based on evidence, expert opinions from economists, public health specialists, healthcare financing specialists, and model based economic evaluation using available data. This analysis identified the most modifiable, impactful causal factors for "high OOPE amongst patients with NCDs". Thereafter feasibility of the proposed option/s was considered from both political and operational perspectives.

Results: Four main categories of underlying root causes that are related to government service provision leading to high OOPE amongst patients with NCDs were identified. When prioritized by TPN, they were as follows: 1. Improving the timely availability of drugs and laboratory services 2. Extending after-hour government laboratory, pharmacy, and clinic services 3. Implementation of Electronic-Health-Record (EHR) for continuity of care. The approximate cost of implementing EHR is Rs. 23 billion and it has a relatively high feasibility as the most cost-effective strategy to reduce 30% OOPE.

Conclusion: Out of the key determinants identified Electronic-Health-Record system as the most cost-effective and feasible policy option through which OOPE can be reduced.

Key words: *Out-of-pocket-expenditure, Root-cause-analysis, Healthcare efficiency*

OP 002

Barriers for seeking health care for refractive errors among children aged 5-15 years in the Colombo District

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Background: Although Sri Lanka has a well-established primary health-care system, which screens the vision of school children of grades one, four seven and ten, the burden of refractive errors implies that further provoking into the issue is needed to identify and rectify causative situations.

Aims: This study determined the barriers for seeking health care related to refractive errors among children aged 5-15 years attending state schools in the Colombo district.

Methods: Descriptive design using qualitative techniques was used among members of the preventive healthcare team in 15 Medical Officer of Health (MOH) areas in Colombo District. Theoretical sampling was used to identify the categories of people to be sampled. Purposive sampling was used to select the MOH areas. Purposeful random sampling was used to select categories of health staff using three different purposely chosen sample frames from which cases were randomly selected. In depth interviews were conducted among the health staff until theoretical saturation was achieved.

Results: The themes that emerged among the public health inspectors were related to the following: defects in screening of school children for visual problems; problems at the home front where they felt that issues in the family prevented students from obtaining health care services; inadequate motivation from the school staff where they felt that the support obtained from teachers was inadequate; inadequate resources available to them for the screening of school children; lack of training with regards to the screening of visual defects of school children; lack of national data pertaining to refractive errors and lack of monitoring for public health inspectors with regards to refractive errors. The themes that emerged from the supervising public health inspectors were related to the following: reduced quality of the screening and follow up of school children for refractive errors; inadequate support from parents and teachers for providing health care facilities for children with refractive errors; lack of provision of health care services at school level for the provision of spectacles for children identified as having refractive errors and lack of responsibility by the

education sector in supporting the screening and treating of refractive error. The themes that emerged from the medical officers of health were related to reduced quality of the screening and follow up of children with refractive errors, poor parental support, lack of monitoring and evaluation of the screening programme and the necessity for the revision of cadre positions of medical officers and the lack of in-service training programmes for Medical Officers of Health.

Conclusions & Recommendations: Barriers identified within the existing system of services related to refractive errors should be rectified by incorporating these changes into the school health programme in order to effectively treat children with refractive errors.

Key words: *Refractive errors, Barriers, Health-seeking behaviour, School-children*

OP 003

Role of telemedicine to reach out to hidden population at risk of HIV in India

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Background: The HIV epidemic has been effectively contained in India. However, there are significant number of people who are at high risk of acquiring HIV and other sexually transmitted infections who may not be covered by existing healthcare system and interventions. This may be due to their cultural and social inhibitions, social stigma and fear of disclosure of their risky behavior. This hidden population is increasingly seeking e-platforms for solutions.

Aims: To observe and analyze a pilot telemedicine HIV preventive and diagnostic intervention

Methods: The secondary data from January 2018 - December 2018 were collected from a telemedicine portal Dr Safe Hands. Following data were collected and analyzed: (1) Demographic profile of the clients (2) HIV related queries and (3) Data related to HIV testing and tele-consultations. This platform has a network of accredited partner laboratories across the country and is reaching out to this hidden population through tailor made social media posts viz. Facebook, Twitter, Instagram, blog posts, Google ad words etc. It provides following services to the users: (1) Information related to HIV and sexual health (2) Confidential consults online and telephonic consults (3) Testing facility at home/any desired address or at the lab and (4) Pre test and post test counseling services to address fears and to facilitate behavioral change. The data were analyzed through Google Analytics and MS Excel.

Results: 30,499 HIV related queries were addressed through live chats, emails and telephonic consultations. 81% of the users approached were between 18 - 34 years of age. About 3/5 of the users were males. Total number of users tested for HIV was 5887 and the case detection rate was 1.22%. The sero-positive individuals were counseled for their HIV status and were linked to local PLHIV networks for care, support and treatment.

Conclusions & Recommendations: Telemedicine is an effective method to reach the hidden population to contain the HIV epidemic and to prevent its resurgence. There is also a need to promote such interventions and platforms.

Key words: *HIV/AIDS, Telemedicine, High risk population, E-health*

OP 004

Pattern of admission to Emergency Treatment Units at divisional hospitals in Galle District

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Background: Emergency care is an important component in primary medical care. In improving emergency care at primary care level, it is vital to understand the current pattern of admission to emergency Treatment Units (ETUs).

Aims: To describe pattern of admissions to Emergency Treatment Units at Divisional hospitals in Galle District.

Methods: A hospital based descriptive cross- sectional study was conducted with a sample of 480 ETU admissions that were reported to 10 randomly selected divisional hospitals, out of 19, in Galle district. Basic socio demographic data and reason for admission were obtained from documents available at the ETU using a data extraction sheet. Data were analysed using SPSS version 20.

Results: Out of a total number of ETU admissions majority were males 61.7 % (n=296) and mean age (SD) was 41.82 (23.26) years. Accidental injury was the commonest individual main reason and 21. 3% (n=102) for seeking care from ETUs followed by Road Traffic Accidents 15% (n=72). Other reasons for seeking care from ETUs were chest pain (8.5%, n=41), respiratory problems (9.4%, n=45), animal bites (5%, n=24) and poisoning (3.1%, n=15) Out of Accidental injuries 77.45% (n=79) were males and their mean age (SD) was 32.61 (21.80) years. Similarly, out of admissions due to Road Traffic Accidents there 72% (n=52) were of males and mean age (SD) was 31.02 (16.80) years. Among those who presented with RTA's majority were less than 30 years (X^2 =11.43, p<0.05). Those who presented with accidental injuries majority were less than 30 years (X^2=16.63, p<0.05). a proportion of 43% (n=203) were transferred to higher levels care.

Conclusions & Recommendations: When planning training programs for ETU management more attention should be paid on managing accidental injuries and RTAs. These findings may suggest the need to strengthen pre hospital care for those conditions. Special attention should be paid to strengthen primary care in the view of minimizing transfers to higher level institutes.

Key words: *Divisional Hospital, ETU (Emergency Treatment Unit), RTA, Road Traffic Accident*

OP 005

Knowledge and perceptions of health care providers on legal and policy environment regarding sexual and reproductive health in Sri Lanka

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Background: Many young people in Sri Lanka face barriers to access reproductive health information and care. Ensuring delivery of proper Sexual and Reproductive Health services for youth is an important public health priority. Thus it is important for health care providers to have adequate knowledge and understanding on current legislations and policies pertaining to sexual and reproductive health services in Sri Lanka.

Aims: The aim of the study was to describe the knowledge and perceptions of health care providers on legal and policy environment regarding sexual and reproductive health in Sri Lanka.

Methods: A qualitative study was carried out using focus group discussions. Total of 48 purposely selected health care providers from different health care settings participated in six Focus Group Discussions. Semi structured interviewer guide was used and all interviews were digitally and manually recorded. Recorded interviews were transcribed, and thematic analysis was done.

Results: Knowledge on Sri Lankan legal and policy environment regarding sexual and reproductive health varied between different health care providers. Nursing officers from obstetric wards had the least knowledge while Public Health Nursing Sisters and Medical Officers of Health had a fairly good understanding of the legal and policy environment in Sri Lanka. Transgender/gender identity was the least familiar areas among all health care workers. The importance of comprehensive sexual education at schools is a theme that emerged from all interviews. Both Public Health Inspectors and Public Health Nursing Sisters wanted to have one legal age limit of 18 years for both marriage and consent for sexual activities. Disappointment on the non-health sector involvement in youth sexual and reproductive services were voiced by many.

Conclusions & Recommendations: Knowledge gaps were clearly seen among health care providers on legal and policy environment regarding sexual and reproductive health in Sri Lanka. Programmes should be implemented to strengthen the knowledge and understanding of health care workers regarding policies and legislations on sexual and reproductive health. In addition to improving the knowledge, a system which monitors misconducts related to legal and policy framework in the health care sectors should be in place to ensure the program sustainability.

Key words: *Knowledge, Perceptions, Legal and policy environment, Sexual and reproductive health, Health care workers*

OP 006

Barriers in Tuberculosis contact screening: A qualitative assessment

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Background: Tuberculosis (TB) is a global public health issue affecting most Asian countries. Close contacts of patients with TB have a substantial risk of developing the disease. Contact screening is a main activity of Tuberculosis control strategy of National Programme for Tuberculosis Control and Chest Diseases in Sri Lanka. However, the barriers and gaps in contact screening process in the local settings remain poorly understood.

Aims: To identify barriers in contact screening process of the TB control programme in Kurunegala District.

Methods: A qualitative study using in-depth interviews was conducted in the Kurunegala district in Sri Lanka. The study population comprised different stakeholders who were involved in the contact screening process. A convenient sample of 8 service providers and 24 care recipients participated in in-depth interviews. Care recipients were selected from both Index TB cases and their close contact groups. Moreover, contacts of TB patients who came for screening as well as those who did not come for screening were equally recruited. A pre-tested in-depth interview guide was used for data collection. Interviews were conducted at district chest clinic and those who did not come to clinic were interviewed at their households. All tape-recorded data with the participants consent were fully transcribed and thematic analysis was done.

Results: At patient registration, care providers do not emphasize adequately on the importance of contacts getting tested for TB. Some of the messages given by care providers were not clear. This ambiguity was more evident in dealing with extra pulmonary TB patients. Even though home visit is a key opportunity for awareness and stigma management, it was poorly utilized. Long distance to the contact screening center (District chest clinic) and long waiting time at the clinic also contributed to poor attendance. Stigma among health staff as well as in the community towards TB was an inhibiting factor for contact screening. Low physical resources and lack of a systematic approach impede the contact screening programme.

Conclusions & Recommendations: Contact screening services are insufficient and available services are not being delivered in an acceptable manner. Proper training of health care providers on contact screening provision with stigma minimization skills are essential. Systematic coaching of care recipients will improve the process.

Key words: *Tuberculosis, Contact screening*

OP 007

Catastrophic Health Expenditure and its determinants among households in rural Puducherry

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Background: Health care expenditures exacerbate poverty. Additional 25 million households or more than 100 million individuals globally pushed into poverty every year because of such expenditures. The Government expenditure on healthcare in India is only 1.04% of GDP which is and less than 30% of total health spending.

Aims: To assess the proportion of catastrophic health expenditure and the factors influencing among households in rural Puducherry.

Methods: A community based cross-sectional analytical study was conducted in selected villages within 5km of a Medical College Hospital in Puducherry from September 2016 to June 2017. Socio-demographic details and health expenditure (the total household out of pocket health expenditures) in the previous year of the households were obtained by questionnaire using epicollect5. Data were exported to Microsoft excel and analysed using STATA(v14). Multivariate analysis using binary logistic regression analysis was done to identify the independent effect of various factors on Catastrophic health expenditure (household's annual health expenditure exceeding 10 per cent of the total annual household income) as a dependent variable.

Results: About 27% of the households incurred catastrophic health expenditure. Multivariate analysis revealed that households with lower socio-economic status [11.21 (95% CI: 5.07-24.82)], presence of vulnerable individuals at home [2.94 (95% CI: 1.82-4.01)], alcohol-tobacco consumption [2.37 (95% CI: 1.31-3.19)] and no health insurance schemes [6.89 (95% CI: 4.74-10.41)] were the factors independently associated with catastrophic health expenditure.

Conclusions & Recommendations: Catastrophic health expenditure was found in about one-fourth (27.2%) of the households. The household factors influencing catastrophic health expenditure were also identified. Strengthening the ability of health-care systems to provide comprehensive care is essential for reducing the burden of catastrophic health expenditure. Special focus must be given to financing the health care needs of the disadvantaged sections of the population.

Key words: *Health care expenditure, Catastrophic health expenditure, Out of pocket expenditure.*

OP 008

Medical College's contribution in ensuring Universal Access to TB care in India- a case study from an Indian Hilly State

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Background: Revised National Tuberculosis Program (RNTCP) in India in 1997 recognized the role of Medical College in providing comprehensive TB care services. Himachal Pradesh State (population 7 million) has seven strategically located Medical Colleges. During initial years of RNTCP launch in Himachal, the program faced several challenges in service delivery, capacity building, infrastructure and skilled human resource. Medical College's involvement provided solutions to many of these problems.

Aims: To assess the role of medical colleges in a state in achieving the objectives of RNTCP of case detection and cure rate for last several years.

Methods: A State Task Force (STF) at state level and Core Committees in all seven Medical Colleges were formed to implement and review the program. Designated Microscopy Center (DMC) cum Directly Observed Treatment Short course (DOTS) centres were opened in these Colleges to provide the quality assured diagnosis and standard treatment. Series of trainings were conducted both at national and state level. Diagnostic and treatment services for MDR-TB cases were also established in all these Medical Colleges. The analysis from all seven centres in last five years (2013-18) is presented.

Results: From 2013 through 2018, contribution from these Medical Colleges improved the total case finding 15% to 38% of pulmonary and 42% of extra-pulmonary TB cases in the state of Himachal Pradesh. State Task Force in last five years supported 31 Post Graduate dissertations on RNTCP. Besides this, 31 major operational research projects by College faculty and 11 small term operational research projects by the undergraduates were conducted with support from STF.

Conclusions & Recommendations: The involvement of medical colleges in increasing the case finding is evident. Operational research to answer programme related questions have also been carried out. The Medical Colleges now have to play bigger role in capacity building, service delivery by improving coordination and operational research to achieve the new targets for 2025.

Key words: *Health care training and teaching institutes, TB elimination, Contribution*

OP 009

Prevalence and pattern of self-medication practices and health seeking behaviour of elderly population attending a health facility in India

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Background: In last two decades, there has been an increase of the aged (above 60 years) population who experience multiple co-morbidities, often chronic, and are prescribed multiple medications. The nature and extent of self-medication in India depend on the cultural, social and educational influences. The prevalence of self-medication according to a few studies has increased from 31% in 1997 to 71% in 2011 and it was therefore pertinent to study the same in geriatric population of Chandigarh.

Aims: The aim of the study was to determine the prevalence, pattern and factors associated with self-medication practices among geriatric population, to study the psycho-social and other health problems among the elderly and to describe treatment seeking behaviour of elderly.

Methods: A cross-sectional descriptive study was conducted recruiting participants attending the Geriatric OPD of Government Medical College and Hospital via a successive sampling technique. A sample of 278 patients were included in the study. Pre-tested structured questionnaire was used for data collection. Data analysis was done by comparison of rates in different sub – groups. SPSS 16 version was used to analyse data.

Results: Out of 278 participants in the study 180 were in the age group of 60-69 years (65%), followed by 81 in 70–79 years age group (30%). There were 155 (56%) female participants. The prevalence of self-medication was 70.5% (n=196). The majority of the participants practicing self-medication (n=153, 78%) reported doctor's advice not necessary for minor illness as a chief reason for self-medication. Most common symptoms warranting self-medication were fever (n=165, 84%), headache (n=147, 75%), followed by cough and common cold (n=104, 53%). Paracetamol (n=165, 84%) and other analgesics (n=127, 65%) were the most commonly used drugs. A total of 56% patients (n=110) reported convenience and 37% (n=72) reported lack of time as a reason for self-medication. Majority of the participants in routine sought health care from allopathic doctor (n=208, 75%), followed by homeopathic doctor (n=70, 25%). Further, maximum participants preferred government health facility (n=208, 75%) followed by private clinic and private hospitals.

Conclusions & Recommendations: Rising Prevalence of self-medication due to various factors such as convenience, lack of time, internet use, advertisements, over the counter drugs is a matter of serious concern. Awareness activities should be strengthened among general population to minimize the practice of self-medication. Further studies need to be carried out among general and geriatric population to understand the attitude of people towards self-medication and associated factors.

Key words: *Self-medication, Geriatric, Health seeking behaviour, Chandigarh, India.*

OP 010

Determinants of patients' satisfaction on Domiciliary Care received by patients with Osteoarthritis in knee joints, attending Rheumatology Clinic Teaching Hospital Karapitiya, Sri Lanka

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Background: Osteoarthritis is the most common articular disease and a leading cause of chronic disability. Loss of joint function as a result of osteoarthritis is a major cause of work disability and reduced quality of life. Domiciliary care (DC) is highlighted in order to improve the quality of life of these patients.

Aims: To identify the level of satisfaction and factors affecting satisfaction on domiciliary care received by patients with osteoarthritis in knee joints.

Methods: This is a hospital based cross sectional study. Pretested self-administered questionnaire was used and 385 patients with diagnosed knee joint osteoarthritis were selected using convenient sampling method. Satisfaction score was developed from the responses given. Data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.

Results: Mean satisfaction score (SD) of the patients was 49.8±16.3 out of a total score 100, the range was from 1-91 and the majority 47% (n= 180) of patients were in the third quartile of the score. Married patients were more satisfied than unmarried patients about the received DC (p<0.05). Satisfaction on DC was better when care was provided by the spouse than when provided by children and close relatives. Satisfaction was lowest when there was no caregiver (p<0.05). Satisfaction was high in patients who receive support from family members for locomotion than who used supportive aids and who do not receive any support (p<0.05). Better satisfaction on DC was found in patients who were engaged in regular exercises than who do exercises occasionally and who do not engage in exercises (p<0.05). Patients who used squatting pans had experienced lower satisfaction than who used commode type toilets (p<0.05).

Conclusions & Recommendations: Marital status, the type of care giver, engagement in exercises, type of toilets used and support from family for locomotion are important factors for the level of satisfaction. It is recommended to establish alternative supportive methods for those unmarried osteoarthritis patients without caregiver and to conduct a program to promote regular knee joint exercises.

Key words: *Domiciliary care, Knee joint osteoarthritis, Patient satisfaction*

OP 011

Prevalence of anaemia in population aged 15 years and above in Jodhpur Rajasthan

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Background: Anaemia is a global health problem and an important cause of morbidity in all age groups, especially among women and children. According to the World Health Organization (WHO), there are two billion people with anaemia in the world and half of the anaemia is due to iron deficiency. Anaemia is a major health problem in India.

Aims: To estimate the prevalence of anaemia in population aged 15 years and above among rural and urban Jodhpur, Rajasthan.

Methods: Community based cross-sectional study was done in two blocks of Jodhpur district (Gelawas and Meghalasia villages). People aged 15 years and above were included in the study. Trained investigators undertook structured face-to-face interviews. Participants were tested for anaemia using Hemocue 301 system. If found anaemic they were given treatment and counselled accordingly.

Results: Out of the 599 participants recruited in the study, 210 were males. A total of 267 (44.6%) participants had anaemia. About one fifth of the participants had mild anaemia (n=132, 22%) and approximately same proportion of participants had moderate anaemia (n=127, 21.2%). Only eight participants had severe anaemia (1.3%). Majority of the male participants (n=147, 70%) aged 15 years and above had no anaemia. Forty six (21.9%) had mild anaemia. Approximately 8 % (n=16, 7.6%) had moderate anaemia. And only one had severe anaemia (0.2%). Almost half of the female participants aged 15 years and above had anaemia (n=204, 52.4%). 22.1% (n=86) had mild anaemia while 28.5% (n=111) had moderate anaemia. Seven female participants (1.8%) had severe anaemia.

Conclusions & Recommendations: Anaemia prevalence was very high among people aged 15 years and above in Jodhpur, Rajasthan. Prevalence was higher among females compared to males. The majority of individuals had mild or moderate anaemia. There is urgent need of comprehensive preventative interventions for the anaemia in the community. More attention should be given to females as anaemia is widespread among them.

Key words: *Anaemia, Prevalence, Adults*

OP 012

The practice of school canteen policy in schools in the district of Rathnapura

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Background: School population consists of 8.2% of Sri Lankan population. Ensuring their health is essential to have healthy and productive adults.

Aims: To describe the practice of school canteen policy in schools in the district of Rathnapura

Methods: Institutional based descriptive cross sectional study was conducted in all schools with functioning school canteens at the time of survey in Rathnapura district in Sabaragamuwa province using a check list and an interviewer administered questionnaire, administered by trained volunteers. Practice of school canteen policy in each of its components was assessed. The association of practice of school canteen policy was assessed in relation to the type of school, number of children, availability of school health club & school food committee, inspection by PHI and the level of knowledge among canteen owners using chi square test for significance.

Results: Among 583 schools in the district, 179 (30.7%) have functioning school canteens, of which 167 were inclueded in the study (93%). Participated schools were Type 1AB; 38 (23%), type IC; 61(36.5%), type 2; 53(31.7%) & type 3 58(9%). Only 9 (5.4%) schools have less than 200 students. 148 (88.6%) have school health clubs and have school food committees. All have school development committees. The PHI has inspected 122 (73.9%) schools while only 25 school canteens (15%) have completed H 800. In relation to practice of school canteen policy, satisfactory levels seen in relation to environment & building in 95 (57%), hygiene & sanitation in 138 (82.6%), food storage in 41 (24.6%), food handling in 119 (71.3%), availability of food varieties in 133 (79.6%), food safety activities in 59 (35.3%), knowledge among canteen owners in 43 (25.7%). Significant positive association was seen between practice of school canteen policy and type of school (X^2 =11.365; df=2; p=0.003): where higher level schools have better practice, inspection by PHI school (X^2 =12.44; df=2; p=0.002). No significant association was found with availability of school health club and school food committee.

Conclusions & Recommendations: Improving the quality of schools and involvement of health sector could improve the correct practice of school canteen policy

Key words: *School canteen policy, Practice, Knowledge, Type of school*

OP 013

Knowledge, practices & associated factors on physical activity among school children in Negombo area

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Background: Regular physical activity (PA) increases exercise capacity and leads to many health benefits. Nowadays physically active behaviours in children have been displaced by more sedentary lifestyle behaviours.

Aims: To assess the knowledge, practices and associated factors (socio-demographic, socio-economic, health status and academic performance) of PA in schoolchildren and to evaluate the associations of PA with such factors.

Methods: School-based descriptive cross-sectional study was conducted among 386 students aged 12-15 years from 1AB two schools in Negombo area from February to September, 2018. A class with 50 students was randomly selected as a cluster from available classes in each grade. The sample consisted of 386 students from both schools for the study and out of that 186 were boys. Informed consent was obtained prior to the study. Self-administered questionnaire was used in data collection. PA was assessed using modified and culturally adapted International Children's PA questionnaire (CPAQ) for Sri Lanka. Height and weight were measured and body mass index (BMI) was calculated. Students' progress reports were assessed. Data were analysed using Excel and Statistical Package for Social Sciences (SPSS) version 20.

Results: Mean age (SD) of children was 13.47 (1.1) years. 99.5% (384) of students had good or average knowledge on PA with a mean score (SD) of 25.7 (3.9). The majority (63%; n=243) of children were physically active. Students had spent mean time of 4891 minutes per week for home activities while, mean time of 656 minutes per week for sports. 53% (n=205) were underweight and 9% (n=35) were overweight or obese. Among 386 students, higher proportion (n=226, 58.5%) had good academic performance with mean (SD) score of 66.05 (15.39). Vigorous PA was higher among underweight children. Normal weight children were physically active with three types of PA. Association between PA and academic performance were positive (p<0.001). Furthermore, a significant association between PA and gender (p=0.04) was found with higher PA in girls than in boys.

Conclusions & Recommendations: Physical activity seems to be an important factor to maintain healthy BMI and good academic performances among school children.

Key words: *Knowledge, Practice, Physical activity, School children*

OP 014

Creative strategies used to advertise food and beverage during children's television hours in Sri Lanka

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Background: Food promotion influences food preferences, purchasing behaviours and food consumption patterns of children. The mounting evidence of the negative effects of food and beverage (F&B) advertising on television to children and the growing rates of childhood overweight and obesity in Sri Lanka may indicate a need to consider regulating advertising of F&B to children.

Aims: To describe the main creative strategies used in food and beverage advertising during children's television hours in Sri Lanka.

Methods: 'Children's television hours' was operationalized as 16:00 hours to 18:00 hours on all days of the week and 08:00 hours to 10:00 hours on Saturdays and Sundays. A cross-sectional descriptive study of F&B related advertisements telecast on fifteen free-to-air Sri Lankan television stations between 11th to 24th May 2015 (n=6648) was conducted. The twenty most frequently aired F&B advertisements (in Sinhala and English languages) during children's television hours were selected for content analysis.

Results: Of 4,555 advertisements telecast during 'children's hours', 1,218 (26.74%) were food and beverage advertisements. When time breaks were excluded, the twenty most frequently aired advertisements accounted for 67.29% (n=648) of this. The most commonly advertised product was biscuits (n=8, 47.1%), especially chocolate and cream biscuits. The most commonly used creative strategies were the use of child actors (n=14, 82.35%) and portrayal of eating (n=10, 58.82%). Three (17.65%) advertisements had an animated character and two featured famous Sri Lankan cricketers. Thirteen advertisements (76.47%) referred to a healthy lifestyle and two advertised giveaways. The most commonly used theme was 'Great taste/flavour (n=12, 85.71%). Four new themes emerged: 'mother's love'; 'being naughty'; 'loved for generations' and 'national pride'.

Conclusions & Recommendations: The most frequently advertised F&B are less healthy. Policies to regulate the marketing of F&B to children need to be strengthened. Creative marketing techniques from this study such as the use of celebrity endorsements and themes such as 'mother's love' should be used for health promotive messages by the Ministry of Health.

Key words: *Food Marketing, Television advertising, Childhood obesity*

OP 015

A situational analysis to strengthen health promotion activities of the Kalutara educational division

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Background: Health promotion is the process of enabling people to increase control over, and toimprove, their health. Approximately 70% of Sri Lankan adolescents attend schools and will become the workforce of the country. Schools offer the most feasible and sustainable mechanism to achieve high coverage of health promotion interventions. After a preliminary analysis, it was revealed that school health is a priority issue in Kalutara Educational Division (KED).

Aims: To explore the present status to strengthen school health promotion activities in KED.

Methods: Information was gathered through direct observations from five randomly selected schools and through interviews with principals, health teachers, students, Public Health Inspectors (PHI) and the Kalutara Medical Officer of Health (MOH). Quarterly school health returns collected by the Kalutara MOH was also perused.

Results: KED administers 29837 students in 35 schools belonging to 11 PHI areas. School demographics were as follows: Gender: mixed 88.6% (n=31), girls 8.6% (n=3), boys 2.9% (n=1); Type: Type-2 48.6% (n=17), Type-1AB 20% (n=7), Type-1C 20% (n=7), Type-3 11.4% (n=4); Number of students: <200 31.4% (n=11), =>200 68.6% (n=24). Common health problems identified among 9044 students were: vision defects 6.3% (n=546), pediculosis 13.2% (n=1192), untreated dental caries 21.0% (n=1908). In-depth interviews and focus group discussions conducted with public health staff highlighted the following: drug addiction; poor menstrual hygiene; poor oral hygiene; poor water intake; increased consumption of fast foods; rising trend of overweight, obesity, and wasting. Observation of five randomly selected schools showed poor sanitary conditions (inadequate number, poor cleanliness, inadequate hand washing facilities), poor waste management practices, unavailability of healthy food in school canteens and non-implementation of healthy canteen policy and unsafe environment. There were no functional school health clubs 0% (n=0) and none were active health promoting schools 0% (n=0). Inter-sectoral collaboration between education and health sectors was poor.

Conclusions & Recommendations: There are several gaps in numerous key public health components in schools of KED. Therefore, it is necessary to implement holistic health promotional activities through community approaches such as reactivated health clubs and improved intersectoral coordination between health and education sectors.

Key words: *Health Promotion, School Health, Adolescent Health*

OP 016

Awareness & utilization of the Child Health Development Record as a tool for childcare information by caregivers of children between 12 months to 2 years of age in the Battaramulla MOH area

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Background: Child Health Development Record (CHDR) has been a useful tool in the Child Health Programme in Sri Lanka since 1994. Assessing the overall awareness and utilization of the caregivers with regards to the CHDR will improve future revisions and benefit the child health programme.

Aims: To describe the knowledge & utilization of Child Health Development Record as a tool for child care information by caregivers of children between 12 months to 2 years of age.

Methods: The study had two components; (1) Community based descriptive cross sectional Study, (2) Qualitative study with focus group discussions (FDGs). An interviewer administered questionnaire and a separate guide were used for the two components. Systematic random sampling was used to select a sample of 403 caregivers. The data was analysed by using Statistical Software for Social Sciences (SPSS), Version 21.

Results: The response rate was 100%. The mother was the main caregiver 83.6% (n=337). Majority of caregivers 95.3% (n=384) had good knowledge on new-born, child care, growth and development and 66.3% (n=267) were aware on measurements recorded in the CHDR. About 81.1% (n=327) of caregivers used the CHDR as an information source for complementary feeding, growth and development. Chi Square test revealed, significant association between the age of the caregiver and getting information on complementary feeding (X^2=7.686, df=1, P=0.006). Statistically significant associations were found between caregiver's level of education and awareness on reading the yellow pages (X^2=29.61, df=1, P<0.001). In the FGDs all the participants perceived the importance of improving the quality of the CHDR further to make it more user friendly.

Conclusions & Recommendations: Most of the caregivers had good knowledge on the information in the CHDR and they utilized the CHDR as an information source for childcare. Public Health Midwife should pay more attention when delivering information regarding the CHDR to the caregiver's who were more than 40 years of age and those who have low level of education.

Key words: *Child Health Development Record, Caregiver, Complementary feeding, Growth.*

OP 017

Breast milk intake of Sri Lankan infants during first year of life

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Background: Breastfeeding is considered to be the best source of nutrition for infants. WHO recommends exclusive breastfeeding (EBF) for infants during first six months of life. Sri Lanka has shown high EBF rates compared to regional countries. However, data on longitudinal breast milk intake of Sri Lankan infants are limited.

Aims: to measure the human milk intake of Sri Lankan infants across the first year of life.

Methods: Cohort study was carried out**.** Milk intake of randomly recruited 35 healthy infants was measured using deuterium oxide (D_2O) dose-to-the-mother technique at 3 months, 6 months, 9 months and 12 months of age. Data on feeding history was collected using an interviewer administered questionnaire.

Results: Human milk intake of the infants at 3 months was 772 ± 134 g.d^{-1} (range 587-1057) and 800 ± 174 g.d^{-1} (range 500-1113) at 6 months (3 months *vs.* 6 months, p=0.30). Infants showed an average non-milk oral water intake of 94.37 ± 44.43 g.d^{-1}. The non-milk oral intake at 3 months was 91 ± 45 g.d^{-1} (range -2-166) and 128 ± 63 g.d^{-1} (range 25-304) at 6 months (3 months *vs.* 6 months, p=0.01). Breastfeeding practices revealed that only 40% (n=12) of mothers at 3 months and 30% (n=9) of mothers at 6 months were practicing EBF. It confirmed that EBF rate among study subjects was 50% at 3 months and 27% at 6 months, with the cut-off of 82.5 g.d^{-1} of non-milk oral intake. Average milk intakes at 9 months and 12 months were 470 ± 165 g.d^{-1} and 390 ± 175 g.d^{-1}, respectively. Breast milk intake was unaffected by mother's age at delivery (p=0.13), parity (p=0.50) or % fat mass (p=0.80). However, milk intake was positively associated with baby's weight (p=0.01, r=0.59) at 3 months of lactation. Milk intake was also positively related to baby's age (p=0.001, r=0.57) and negatively to mother's age (p=0.03, r=-0.40) at 6 months of lactation.

Conclusions & Recommendations: This study presented for the very first time, the longitudinal data on human milk intake among Sri Lankan infants. Milk intakes of Sri Lanka infants are comparable with the milk intake reported among infants from developed and developing countries. However, more emphasis should be put to enhance the exclusive breast feeding in Sri Lanka.

Key words: *Human milk intake, Deuterium, Dose-to-the mother technique, Sri Lanka*

OP 018

Physical activity and sedentary behaviour among 10 to 11-year-old children in selected Medical Officer of Health areas in Colombo district

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Background: Engagement in moderate-to-vigorous physical activity (MVPA) for at least 60 minutes/day is recommended for children. Sedentary behaviour and lack of physical activity (PA) are risk factors for cardiometabolic diseases.

Aims: To assess physical activity and sedentary time (ST) among 10-11-year old children in Colombo district.

Methods: This descriptive cross-sectional study was conducted as part of a retrospective cohort study in eight randomly selected medical officer of Health (MOH) areas in Colombo district. Children born in 2005 were identified through public health midwives in the community. Mothers were interviewed in the presence of child using the "Physical Activity Questionnaire – Sinhala (PAQ-S)" which had been validated among 13-14-year-old children in Sri Lanka. PA was defined as engagement in moderate to vigorous physical activity for at least 60-minutes per day. PA assessment was based on questions assessing the number of days physically active in the past Seven days and in a typical week. A composite physical activity score was calculated as the mean of above two items. ST was assessed by the time spent on three sedentary activities: screen time (TV, computer and mobile devices), homework and tuition per day during weekdays and weekends.

Results: Four hundred and eleven children participated in the study and 45% (n=185) were boys. Mean age was 10.8 (SD= 0.3) years. Approximately 29% (n=120) met the global recommendation for MVPA while 48.9% (n=201) were physically active for ≥ 5 days/week. Median composite physical activity score was 4.5 (IQR 2.5 - 7) days/week. Boys were significantly more physically active compared to girls (p<0.001). Median time (IQR) spent on screen time, homework and tuition during week days were 2 (2-3), 3 (2-3), and 2 (1-3) hours respectively. Median time (IQR) spent on screen time, homework and tuition during weekend were 3 (2-4), 3 (2-3), and 3 (3-4) hours respectively. Median total ST was 7 (IQR 5 – 8) hours during week days and 9 (IQR 7 – 10) hours during the weekend. There was no difference in ST by sex.

Conclusions & Recommendations: This study showed low PA level and high ST among 10-11-year-old children. Parents and teachers should be educated on increasing the physical activity and reducing the ST among children.

Key words: *Physical activity, Adolescents, 10-11 year old children, Sri Lanka*

OP 019

Knowledge and attitudes on infant feeding among Public Health Midwifes in Jaffna District

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Background: Public Health Midwives (PHMs) are the pillars of the community level maternal child health services in Sri Lanka. They are ranked as the main source of information on infant and young child health among general community. Thus, understanding the level of knowledge and attitude on infant feeding among PHMs is essential to shape up national interventions to improve child feeding.

Aims: To describe the knowledge and attitudes among (PHMs) on infant feeding in Jaffna District.

Methods: A cross sectional descriptive study was conducted among PHMs in the Jaffna District using a self-administrated questionnaire. The sample size was calculated using Finite Population Correction. Thus a total of 130 PHMs out of 253 were selected using simple random sampling technique using all PHMs enrolled in RDHS Jaffna as a sampling frame. The knowledge on infant complementary feeding practices and attitudes towards recommended complementary feeding practices were collected using validated structured questionnaire.

Results: Mean age of PHMs in Jaffna district was 35.6 years (SD 9.1). Jaffna MOH was the largest with the mean age of PHMs as 45.3 years (SD 4.3). Proportion of PHMs residing inside the MOH area was 29.3%. Training on IYCF was received by 90.1% of PHMs and 57.7% had training on child growth and monitoring. PHMs knew the ideal age for introducing eggs for an infant and hunger signs and cues of infants was 46.2% and 18.5% respectively. Adverse effect of early introduction of complementary feeding was correctly recalled by 13.1% of PHMs. The response toward giving cow milk, cheese and yogurt for infants was appropriate among 55.4% of PHMs. Nearly 19.2% of PHMs said that the timing of introducing complementary feeding was after the eruption milk teeth.

Conclusions & Recommendations: Some key aspects of knowledge and attitude about infant complementary practices need improvement among PHMs in Jaffna District. Context specific guidance may improve the misconceptions related to infant complementary feeding in this community.

Key words: *Infant feeding, Complementary feeding, Public Health Midwives, Knowledge and attitude*

Oral Presentations

Day 1: 19th September 2019, 8:30 am - 10:30 am, Oak Room 3

FREE PAPER SESSION 3: OCCUPATIONAL & ENVIRONMENTAL HEALTH

Chairpersons: Dr. Manuja Perera   **Dr. Inoka Suraweera**

OP 021

Knowledge, attitudes and associated factors on healthy ageing among nurses aged 40-60 years in teaching hospitals of Colombo district

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Background: Population ageing is evident in Sri Lanka and worldwide. It has many health and health related implications. Concept of healthy ageing enables to convert ageing from a burden to a resource. It can be achieved through life course approach. Assessing knowledge on healthy ageing among different age groups is vital. It is evident that knowledge on healthy ageing is lacking among health care providers. Nursing officers are service users as well as service providers. Assessing their knowledge and attitudes regarding healthy ageing is essential.

Aims: To assess the knowledge, attitudes and associated factors on healthy ageing among nurses aged 40 to 60 years in teaching hospitals of Colombo district.

Methods: A descriptive cross-sectional study was conducted. A self-administered questionnaire with face and content validity was administered to 426 nursing officers selected using simple random sampling in nine teaching hospitals of Colombo district. The data were collected and analysed by the principal investigator. Knowledge was assessed using a scoring system. Statistical analysis was done using SPSS statistical package, version 22.

Results: 411 Nursing Officers responded. The average knowledge score for life style factors was 68.1% (n=411) while average knowledge score on elderly care services was 65.7% (n=411). Statistically significant association among knowledge score on life style factors and marital status was found (p=0.011). Knowledge on elderly care services was not significantly associated with sociodemographic factors. Majority (47.9%) of the participants' attitude was to retire at 60 years of age. Approximately 51% of the participants had not planned on any financial management after 60 years of age. More than 50% of the study participants were not engaged in physical exercises as a daily routine. Nursing officers had a good knowledge score on diet related factors. Nursing officers considered that maintaining social contacts is important to obtain healthy ageing.

Conclusions & Recommendations: Nursing officers had satisfactory knowledge on life style factors and elderly care services. Further improvement of attitudes on financial planning, social contacts and knowledge on physical activity and elderly home modifications should be focused to promote healthy ageing among the nursing population.

Key words: *Healthy ageing, Nursing officers, Knowledge, Attitudes, Associations*

OP 022

Respiratory morbidities among municipal solid waste management workers in India: a community based cross-sectional study

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Background: Waste management, namely, collection, transport, sorting, processing and disposal is an issue of social concern owing to its environmental impact. Solid waste handlers are exposed to several pathogens, toxic substances and chemicals thereby suffering high rates of occupational health problems, the most vulnerable among those being respiratory morbidities.

Aims: To estimate the prevalence of respiratory morbidities among municipal solid waste management workers in Puducherry and to assess their lung functions

Methods: A community based cross-sectional study was carried out in May and June 2018 to assess the prevalence of respiratory morbidities, obstructive lung pattern (Defined according to the Tiffenau Index as (FEV1/FVC) < 70% or an FEV1 < 80% of predicted values) and its associated factors among municipal solid waste management workers in Puducherry. Workers (N=264) selected by simple random sampling underwent semi-structured interview to gather their socio-demographic characteristics, work-related information, presence of respiratory symptoms and morbidities followed by respiratory system assessment and lung function tests using a portable electronic spirometer. The data were entered using Epidata entry client and analysed using SPSS (v16). The data were summarized by mean and standard deviations (SD) and frequencies and percentages. Bivariate analysis was done to identify the various factors associated with presence of respiratory illness and obstructive lung function.

Results: Among the workers (N=264) mean age (SD) was 47.1 (8.87) years and majority were females (85.6%), illiterate (65.9%), belonging to lower middle class (45.8%), working as waste collectors (86%) on day duty (73.5%). More than two in five workers had a respiratory morbidity (42.8%) with prevalence of cough 29.5%, wheezing 17.1%, phlegm 31.4%, breathlessness 29.2% and other chest illness

7.3% or an obstructive lung pattern (44%). Higher age, occupation as street sweeper or waste collector, night shift duty, not using face mask on duty and not receiving training on waste handling were the factors significantly associated with the presence of respiratory symptoms and obstructive lung function.

Conclusions: Respiratory morbidity among municipal solid waste management workers in Puducherry is high.

Key words: *Respiratory morbidities, Solid waste management workers, Puducherry*

OP 023

Factors associated with burnout among nurses working in National Institute of Mental Health, Sri Lanka

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Background: In many countries majority of the national health workforce is made up of nurses thus they play a major role in healthcare delivery. Burnout is a physical or psychological fatigue or exhaustion felt by an individual due to personal, work and client related stressors. Previous studies report that nurses, especially psychiatric nurses are more prone for burnout which may adversely affect service delivery. Hence, this study on Sri Lankan psychiatric nurses is a timely requirement.

Aims: To determine the prevalence of burnout among psychiatric nurses and to assess the factors associated with burnout

Methods: A descriptive cross sectional study was conducted among all nurses involved in patient care (n=346) working at National Institute of Mental Health, Sri Lanka. The study instrument was a self-administered questionnaire. Burnout was measured using the translated and validated Copenhagen Burnout Inventory. Association of personal, family related and work related factors with burnout was assessed using bivariate analysis. P value of 0.05 was taken as the significance level.

Results: Response rate was 85% (n=296). Prevalence of burnout was 31.8% (95% CI: 30.5%-33.55%). Highest mean (SD) score was seen in the component of Personal burnout with a mean (SD) score 40.75 (18.76). Work related and client related burnout had a mean (SD) score of 29.24 (17.76) and 29.53 (16.97) respectively. Personal factors such as age, presence of long term illness and perceived health status showed significant association with burnout (p<0.05). Family related factors were perceived child care burden, perceived household burden and family income (p<0.01). Significantly associated work related factors were nursing experience, working environment, work demand, work resources, work support (p<0.01). Work related factors that were specific to the psychiatric setting such as social stigma, difficulty in handling mentally ill patients, unpredictable nature of client, and unsafe environment for the staff showed significant association (p<0.01) with burnout.

Conclusions & Recommendations: Burnout affects more than one third of nurses at NIMH. Strong association was shown with work related factors especially the factors that were specific to the psychiatric setting. Therefore it becomes a responsibility of health managers to address these factors before it compromises patient care at NIMH.

Key words: *Psychiatric nurses, Burnout, Prevalence, Associated factors*

OP 024

A systematic review to estimate the burden of work-related musculoskeletal disorders among garment workers in South Asia

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Background: Work-related Musculoskeletal Disorders (WMSDs) are considered one of the central occupational health problems in both developed and developing countries. Localised pain, swelling, and discomfort in the affected area are the commonest symptoms of WMSDs and may result in chronic pain and lifelong disability.

Aims: To estimate the burden of WMSDs among garment workers in South Asian Countries.

Methods: Protocol and search strategy were registered with PROSPERO [CRD 42018089638]. 15 electronic databases, and 4 grey literature sources were searched for publications. Reference lists of selected articles and two academic search engines were used to find any missing articles. Studies published in English language focusing on garment workers of South Asia were included, irrespective of the type and date of publication. Joanna Briggs critical appraisal tools were used for quality assessment.

Results: 2534 studies were identified. Following screening and assessing eligibility, 45 journal articles and 5 theses from Bangladesh, India, Nepal, Pakistan and Sri Lanka were included in the final review. Heterogeneity existed in study design, population, sample size, and measurement of determinants. The 43 descriptive cross-sectional studies included sample sizes ranging 20 – 1191, reported age ranging 16 – 62 years and reported overall prevalence of WMSDs among both male and female garment workers between 15.5% - 92%. Lower back pain was reported by twenty-nine studies and prevalence ranged 6.2% - 90%. Twenty-eight studies reported shoulder pain and prevalence ranged 1.4% - 88%. Neck pain was reported by twenty-five studies and prevalence ranged 1% - 91%. Twenty-one studies reported knee pain and prevalence ranged 2% - 80%. Thirty-six studies reported pain as the most common symptom of WMSDs, while numbness and stiffness were also reported by several studies. Static work posture, long working hours, repetitive actions and low job satisfaction were reported as the main contributing factors. The most frequently used assessment instrument was the Nordic Musculoskeletal Questionnaire.

Conclusions & Recommendations: Burden of WMSDs among garment workers in the South Asian region is high. Shoulder, low back, neck and knee pain were common. There may be opportunities to intervene and minimize WMSDs based on identified factors.

Key words: *WMSDs, Garment, Pain, Sri Lanka, South Asia*

OP 025

Factors associated with food safety practices among food handlers in selected food handling establishments in Ratnapura Municipal Council area, Sri Lanka

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Background: Food handlers (FHs) play an important role on food safety (FS). Their unsafe food handling practices and associated factors may contribute to certain food borne diseases. They may also act as carriers of microorganisms.

Aims: To determine factors associated with food safety practices among FHs in selected food handling establishments in the Ratnapura Municipal Council (MC) area.

Methods: A descriptive cross-sectional study was conducted among 417 FHs in hotels/ restaurants and tea kiosks/snack bars registered in the Ratnapura MC, Medical Officer of Health area, using a pre-tested interviewer administered questionnaire. Multistage cluster sampling method was used to select study participants. Associations between food safety practices and categorical independent variables were described using Chi square test of significance with the p value of ≤ 0.05 as level of significance.

Results: Response rate was 95% (n=417) and mean age of the study sample was 42.4 years (SD = 12.41). The mean duration of employment as a FHs was 10.2 years (SD= 8.64) and most of them 97.1% (n=405) were not vaccinated against typhoid fever. Many socio demographic and work related factors were found to have highly significant association (p< 0.001) with practices of food safety among study sample: higher education level, income level and duration of work as FHs, those who; enjoyed their career, happy with the work load, satisfied with monthly income and support of the boss when having problem at the work place. Sex (p< 0.05), being married (p< 0.05) also had statistically significant association with good FS practices. High proportion of FHs were not trained on FS (n=342, 82%) while association between those who had undergone training on food safety and their FS practices was statistically significant (p< 0.05). About 68% (n=283) had not undergone any medical examination during year 2018. More than half of the study sample, (n=243, 58.3%) had good knowledge and practices (n=227, 54.4%) while 71% (n= 296) had positive attitudes on food safety. Though the association between knowledge and FS practices was statistically not significant (p=0.25) among FHs, association with positive attitudes was highly statistically significant (p<0.001).

Conclusions & Recommendations: Good attitudes, being female, married, educated up to O/L, worked as a FHs for more than 5 years, positive work satisfaction were identified as associated factors for good FS practices. Recommend to conduct regular FS awareness for FHs taking measures to enhance attitudes and all identified associated factors.

Key words: *Food, Food handler, Food safety, Food handling practices, Food handling establishments*

OP 026

Work-life balance associated factors and job satisfaction among medical officers   Medical Officers in Lady Ridgeway Hospital for Children, Sri Lanka

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Background: The medical profession is of heavy clinical or non-clinical work, needs more time, therefore, balancing the work and the life would be a difficult task. The job is essential for economical needs. Good work life balance and good job satisfaction gives numerous benefits to the Medical Officer as well as to patient or the client.

Aims: To determine the factors associated with work-life balance and job satisfaction among Medical Officers in Lady Ridgeway Hospital for Children.

Methods: Institution based descriptive cross-sectional study was conducted among 420 grade Medical Officers attached to Lady Ridgeway Hospital for Children in Colombo during August and September in 2017. A self-administered questionnaire was used to collect data. Descriptive statistics were used to describe variables. Chi-square test with 5% significance level was used to analyze the associations using SPSS version 20.

Results: The response rate was 90% (n=384). Of the participants, 46.1% (n=177) had good work life balance and 62.5% (n=240) had good job satisfaction. Work related factors significantly associated with good work life balance were, current designation as Medical Officers and Senior House Officers, service more than 10 years (p<0.05), daily work less than eight hours (p<0.05), off days more than three per one month (p<0.05). Family related factors significantly associated with good work life balance were, not having children less than five years (p<0.05), living with family members, more than 10 hours spent with family members (p<0.05). Personal factors significantly associated with good work life balance were, travelling time equal or less than one hour (p<0.05) and being engaged in a recreational activity.

Conclusions & Recommendations: Respondents who had good work life balance had good job satisfaction. It is recommended to create a supportive environment to improve work-life balance and job satisfaction among Medical Officers addressing the problem areas.

Key words: *Work life balance, Job satisfaction, Medical Officers*

OP 027

Evaluation of safety climate and its associated factors in Base Hospital Avissawella

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Background: The safety climate can be defined as "summary of perceptions that employees share about the safety of their work environment". It is influenced by several factors.

Aims: To assess the safety climate and its associated factors in Base Hospital Avissawella.

Methods: A descriptive cross-sectional study was done among a sample of grade medical officers (n=109) and nursing officers (n=193) selected by simple random sampling. Sampling frame was the pay sheets of both categories. Data collection was done for one month using a structured, pre-tested, self-administered questionnaire, based on validated "20-item hospital safety climate scale". It comprised 6 dimensions 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.

Results: Among the six safety climate dimensions, highest perception of existence was for the availability of personal protective and engineering control equipment availability (mean=3.94, SD=0.67) and the lowest was for the absence of job hindrances (mean=3.27, SD=0.83). Among the respondents, 83.5% (n=219) had at least one occupational injury during the last 6 months. Injury prevalence was 86.4% (n=76) among medical officers and 82.2% (n=143) among nursing officers. There was no significant relationship between job category and injuries. Only 28.3% (n=62) had reported about their injuries. Only 60.7% (n=159) were strictly compliant to safe work practices. The compliance of nursing officers (n=127, 73%) was significantly better than medical officers (n=32, 36.4%) (p<0.05). 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)

Conclusions & Recommendations: Occupational injuries were common among both staff categories. Majority was "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. Therefore, hospital managers should pay more attention on improving safety climate, in order to improve the safety of their employees.

Key words: *Safety climate, Occupational injuries, Safe work practices, Compliance*

OP 028

Households' costs due to hospitalizations among Stone cutting mine workers who died of silicosis and silico-tuberculosis, Jodhpur, India

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Background: Silicosis is a long-term lung disease caused by inhaling large amounts of crystalline silica dust. In 1999, the Indian Council of Medical Research (ICMR) reported that around 3.0 million workers are at high risk of exposure to silica; of these, 1.7 million work in mining or quarrying activities, 0.6 million in the manufacture of non-metallic products and 0.7 million in the metals industry. There are also around 5.3 million construction workers at risk of silica exposure. A report published by National Human Right Commission say that number of persons who die from silicosis in India is large but there are no statistics available concerning these deaths. As the diagnosis is often delayed the patients and their family suffer higher costs, which leads to the catastrophic impact on the family, especially during hospitalizations.

Aims: To estimate the costs due to hospitalization among stone cutting mine workers who died of silicosis and silicotuberculosis in Jodhpur Rajasthan India.

Methods: This study is an interim analysis of a study carried out at All India Institute of Medical Sciences, Jodhpur titled "Cost Analysis of Silicosis and Silico-Tuberculosis care among those working in the stone cutting mines of Jodhpur: A mixed-methods Study." Community based cross-sectional study was conducted in the residential areas of the mineworkers at Jodhpur Rajasthan India. Family members of all those who have died of silicosis and silicotuberculosis, 78 patients were interviewed to determine the cost from patients'-households' perspective.

Results: Mean age at death of the patient was 47.29 years; mean duration of work was 29.18 years. Time to reach nearby health facility was less than 30 minutes. 82 % (n=65) of patients were Tuberculosis positive before death. Average no of family members were 6 and the average family income per annum was Rs. 185700 (INR). Mean no of family members working in the same occupation i.e. mines were 2; mean no of earning family members are 2. Mean duration of hospitalization was 67 days in their entire illness duration, as they underwent multiple hospitalizations. The mean hospitalization expenditure was Rs. 128591 (INR). Almost all (91%) borrowed money for seeking treatment. Average cost on food during hospitalization was Rs. 5181 (INR) and on travelling was Rs. 3840 (INR).

Conclusion & Recommendations: Households of mine workers with silicosis and silicotuberculosis experience higher costs for hospitalisations. WHO has proposed that health expenditure is viewed as catastrophic whenever it is greater than or equal to 40% and in case of silicosis patients it is 69.2% indicating a financial catastrophe to the families of mine workers. Financial protection schemes are needed.

Key words: *Silicotuberculosis, Health Expenditures, Silicosis.*

OP 029

Behavioural pattern analysis of the fishing community in relation to coastal environment pollution;: A qualitative study in the Beruwala Fisheries Harbour

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Background: Disposal of solid waste into ocean by fishermen and boat servicemen was found to be a principal source of coastal pollution in Beruwala. Planning an intervention to address the issue of costal pollution necessitated an understanding of underlying circumstances resulting in such behavior as well as their opinions on potential alternatives.

Aims: To explore underlying reasons for dumping of solid waste into the ocean by describing the circumstances leading to the particular behaviour of fishermen and to assess their reception of potential interventions to reduce coastal pollution.

Methods: Two focus group discussions were carried out with 30 fishermen and boat servicemen selected through convenient sampling method. The discussions took place at a location where most of the participants gather after daily work. Semi-structured discussions were moderated by one investigator using a discussion guide and five other investigators participated as observers and note takers. Confidentiality was assured, and measures were taken to make participants feel at ease. Investigators transcribed the proceedings of each discussion and analysis was done to identify themes and patterns that emerged during the discussion.

Results: Perceived poor hygiene and hardness of drinking water provided by the harbor management and the convenience of using bottled water at work prompted them to opt for disposable water bottles as their principal source of drinking water. The high cost incurred in purchasing bottled water was considered an opportunity to inculcate a positive behavioural change and they were open to the option of bringing back water bottles to be refilled as long as the salinity and the purity of water provided was taken care of. Poor availability of garbage bins at the pier due to its haphazard placing and poor implementation of docking arrangements instigated dumping of solid waste to the sea during servicing of boats. Although the servicemen were not entirely receptive to the idea segregating waste, they were willing to dump waste into garbage bins given they were placed at points convenient for them to reach.

Conclusions & Recommendations: Behavioral patterns causative of coastal pollution among the fishing community in Beruwala are intricately linked with many underlying circumstances and working conditions, which makes changing such behaviour a challenging endeavor. Measures such as proper placing as well as the adequacy of garbage bins and ensuring the quality of drinking water provided would help in inculcating improved practices amongst the fishermen at the Fisheries harbour, Beruwala.

Key words: *Behavioural analysis, Costal pollution, Qualitative approach, Fishing community*

Op 030

The household water usage, community awareness regarding water pollution and factors associated with it among adult residents in MOH area, Uduvil

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Background: Water pollution is one of the public health burdens. Consumption of contaminated water has adverse health effects and could even affect fetal development. Underground water is the main water source to Jaffna district and the aquifers have been polluted. There were many pollutants identified in the underground water.

Aims: To describe the household water usage pattern, community awareness of water pollution and factors associated with it among adult residents in MOH area, Uduvil.

Methods: A descriptive cross sectional study was conducted on a community based sample of 817 adult residents with multi stage cluster sampling method. The data were collected by an interviewer administered questionnaire. Statistical significance for selected factors and awareness were analysed with chi square and Mann-Whitney U test.

Results: This study sample consisted of 85% (n=695) females. Participants had a mean (SD) age of 47.8 (16.2) and all (100%) were Tamils. Majority 97.5% (n=797) knew about the water pollution in their area. Only 23% (n=188) participants knew about all the characters of good water. Among the participants, 25% (n=205) knew at least 4 diseases out of the 5 given diseases. Among the participants 48.6% (n=397) had noticed the organoleptic changes in their own well and only 1.5% (n=12) had confirmed the pollution by lab test. Among them 71.2% (n=582) were treating the water, majority of them 24.9% were boiling the water. The majority 93.1% (n=761) have stored the water in a container with a lid. The median knowledge score was 10.93. There is significant difference in knowledge related to water pollution among different educational levels (U= 53339.5, p<0.001) and the presence of water related diseases in the family (U=54146.5, p<0.01). There was a significant association with the age groups and their water treatment practices (χ2= 7.17, p<0.01). The presence of and under 5 year age child in the family had significant association with water treatment practices (χ2=13.1, p<0.001).

Conclusions & Recommendations: Community awareness on water pollution among the participants and their safe water practices were not satisfactory. There is a need for improvement of the individual level capacity by conducting awareness programs and programs on attitudinal change among the community.

Key words: *Community awareness, Water pollution, Household water sources, Safe water practices*

OP 031

Burden and differentials of under-five mortality in EAG states of India: evidence from NFHS-4

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Background: Globally, both low-income and middle-income countries including India have experience substantial decline under-five mortality rate (U5MR) i.e., infant and child mortality rates due to reproductive and child health programme interventions during past two decades. In India, overall U5MR has been declined from 74 to 50 per thousand live births in 2005-06 to 2015-16. The Empowered Action Group (EAG) states are very high under-five mortality rate as compared Non-EAG states.

Aims: The aim of the study was to review the current information on trends, burden & differentials of under-five mortality in EAG States of India.

Methods: We analysed data set of National family Health Survey (NFHS-4) round four on under-five mortality in only for Empowered Action Group states of India. The National Family Health Survey is a cross-sectional household survey conducted in year 2015-16. Total information of 322396 children born during past ten years preceding survey were analysed.

Results: The share of under-five deaths in only 9 EAG states is around 74% of total under-five deaths in India. Maximum deaths are in Uttar Pradesh (33.0%), Bihar (13%), Madhya Pradesh (9.6%), Rajasthan (8.0%), Orissa (3%) & Jharkhand (3%). Approximately 41% of all under-five deaths happen in the first week of life and the risk of deaths during neonatal period were at least 68 times higher than the rest of childhood. The children living in rural areas and wealth index have the highest risk of death in India. The absolute change from NFHS-3 to NFHS-4 in U5MR was seen maximum in Orissa (43), Jharkhand (39), Rajasthan (34), Assam (29), MP (29), Bihar (27) and UP (18) during last decades.

Conclusions & Recommendations: The reduction in U5MR in India during 1990–2015 has been insufficient to attain Sustainable Development Goal (SDG). However, there have been declines in different levels of under-five mortality rate. Despite the well-known importance of neonatal survival to attain SDG, NFHS-4 data suggest the early neonatal mortality rate in India may be increasing in the recent years, which is a cause for serious concern. Achievement of SDG in India will require further acceleration in the reduction of the levels of under-five mortality rate, particularly, in the 9 highest burden EAG states of India which are UP, Bihar, MP, Rajasthan and Orissa, Jharkhand, Chhattisgarh, Uttarakhand and Assam.

Key words: *Under-five mortality, EAG, SDG, NFHS, Goals*

OP 032

Health related quality of life of children (HRQoL) between 2-12 years with Thalassemia major in two tertiary care hospitals in Sri Lanka

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Background: Thalassemia is an inherited hemoglobin disorder. There are two types; Thalassemia major and minor. Thalassemia major directly affects children's physical, emotional, social and school functions. Thalassemia major affects school performance and ultimately it will affect the future and the economy of the country. There are no published data related to the HRQoL of pediatrics with thalassemia, in Sri Lanka.

Aims: This study was designed to assess the health related quality of life of children (age between 2-12 years) with Thalassemia major in two tertiary care hospitals in Sri Lanka.

Methods: A cross sectional study was conducted among 60 children with Thalassemia major attending clinics in Lady Ridgeway Teaching Hospital, Colombo and North Colombo Teaching Hospital, Ragama from July to September 2018. Consecutive sampling method was used for this study. Children with a critical illness were excluded. Demographic data and risk factors were collected using an interviewer administered questionnaire. HRQoL data were collected using the Sinhala version of Pediatric Quality of Life Inventory Version 4.0 Generic Core Scale. Data were analyzed using SPSS version 20.

Results: The majority of patients (58.3%, n = 35) were 8–12 years of age, male (55%, n = 33) and their parents were not consanguineous (87%, n = 52). Means of the total functioning scores of physical, emotional, social and school were 89.42 (±9.20), 87.83 (±10.43), 95.00 (±7.53) and 78.75 (±14.13) respectively. Age of the children was significantly associated with emotional functioning (p=0.046), school functioning (p=0.023), psychosocial health (p=0.021) and total summary score (p=0.006). Total number of annual blood transfusions per patient were significantly associated with physical functioning (p=0.002), psychosocial health (p=0.045) and total summary score (p=0.034).

Conclusions & Recommendations: Age and total number of blood transfusions per year had a significant association with HRQoL of children with Thalassemia major. Gender,

type of iron chelation and age at first blood transfusion had no significant association. It is better to conduct island wide screening programme to identify carriers of the Thalassemia.

Keywords: *HRQoL, Thalassemia*

OP 033

Profile of nutritional status among children with cerebral palsy in a tertiary care rehabilitation center, Colombo, Sri Lanka

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Background: Nutritional status is a key factor affecting the quality of life in a child with Cerebral Palsy.

Aims: To evaluate the nutritional status of children with cerebral palsy with relevance to current defined growth parameters.

Methods: Descriptive cross sectional study was conducted among 104 children with cerebral palsy, attending a rehabilitation clinic in a tertiary care hospital in Colombo, Sri Lanka. Sampling method was convenience sampling. Data were collected from all the children with cerebral palsy attending for the rehabilitation, during three consecutive months. Interviewer administered questionnaires were adopted to collect primary data. Measurements were done in growth parameters.

Results: Mean age was 6 years with male preponderance 68% (n=71). Mother 87% (n=90) was the main care giver and overall care was satisfactory 81% (n=84). Majority of the children 54% (n=56) were suffering from other medical conditions and seizure disorders 51% (n=53) were common amongst them. Children with GMFCS (Gross Motor Function Classification System) level 4 and 5 with severely limited independent physical limitations were common 61% (n=63). In consideration of nutritional status according to weight for height or BMI, malnutrition 53.9% (n=56) was the commonest with 20% (n=11) of severe acute malnutrition, 25% (n=14) of moderate acute malnutrition and 55% (n=31) of chronic malnutrition. While 38.7% (n=40) had normal nutritional status, 7.7% (n=8) were overweight or obese. Although majority 66% (n=69) had adequate protein intake (p<0.05), energy intake was significantly low (p<0.001) in 63% (n=65). 77% (n=80) of the children were administered normal solid diet and 99% (n=103) were fed orally. Food supplementation was given for 51% (n=53) (p<0.05) and 67% (n=70) had no multiple vitamin mineral supplementation.

Conclusions & Recommendations: Malnutrition is common among children with cerebral palsy presented to tertiary care rehabilitation center in Colombo. Detection of malnutrition and referral for proper nutritional care is very important in overcoming malnutrition in above population.

Key words: *Nutritional status, Children with cerebral palsy, Growth parameters*

OP 034

Prevalence and factors associated with the use of long acting and permanent family planning methods among eligible couples in Medical Officer of Health area Akkaraipattu

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Background: Long acting and permanent family planning methods (LAPMs) are effective, convenient and low cost family planning (FP) methods . Better understanding about the factors associated with the use of LAPMs is important to promote the utilization of them.

Aims: To determine the prevalence and to describe the factors associated with the use of long acting and permanent family planning methods among eligible couples in Medical Officer of Health area Akkaraipattu

Methods: A community based descriptive cross sectional study using structured, pretested interviewer administered questionnaire was conducted among eligible couples in Medical Officer of Health (MOH) area Akkaraipattu. Two stage sampling was used to select 344 participants. Chi-square test was used to determine the association.

Results: Prevalence of LAPMs was 16.5% (n=55, 95% CI: 12.51–20.53). Older than thirty years (p=0.015), husband older than thirty-five years (p=0.008), married for more than ten years (p=0.002), nuclear family (p=0.021), no need of more children (p<0.001), having two or more children (p<0.001), at least had three pregnancies (p <0.001), first child older than ten years (p=0.08), had unintended pregnancy (p=0.016), discussed with husband (p <0.001), husband's positive opinion (p <0.001) and positive attitude towards LAPMs (p =0.046) were the client related factors statistically associated with the use of LAPMs. Source of FP knowledge was medical personnel (p=0.033), perception of satisfactory services (p<0.001), receiving FP from government (p <0.001), at least one FP counselling (p=0.016), counselled by medical personnel (p=0.007), husband ever counselled (p=0.003), having follow up (p <0.001), satisfied with the FP services of Public Health Midwives (PHM) (p =0.040) and counselled by PHM (p =0.013) were the service related factors statistically associated with the use of LAPMs.

Conclusions & Recommendations: Several client and service related factors were associated with the use of LAPMs and most of them could be positively improved by public health modifications and policy level actions. FP service provisions in the field and by PHM should be further strengthened. It is recommended that these factors be further explored and used to facilitate the use of LAPMs.

Key words: *Long acting and permanent family planning methods, Eligible couple, Factors associated*

OP 036

Prevalence of dental caries and associated maternal characteristics among children aged six to seven years attending a primary school in Sri Lanka

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Background: Dental caries is a common oral disease and is the most prevalent oral disease among children worldwide. Socioeconomic factors are significant predictors of oral behaviors, dental services usage and of the presence of dental caries.

Aims: To determine the prevalence of dental caries among children aged 6 to 7 years attending a primary school of Piliyandala educational zone and to describe associated factors between the presence of dental caries among them and socio-demographic characteristics of their mothers.

Methods: A descriptive cross sectional study was carried out among 304 children. All children aged 6 to 7 years attending a Primary School in Piliyandala Educational Zone were included to the study. Children having congenital abnormalities and physical deformities were excluded. Data collected from mothers of children using an interviewer-administered questionnaire (modified based on WHO oral health questionnaire for children). Oral examination conducted to assess decayed, missed, filled teeth for primary and permanent teeth (DMFT/dmft) by the school dental therapist. SPSS (Statistical Package for Social Sciences) was used for data analysis. A probability of $p<0.05$ was considered significant.

Results: The study population comprised 52.6% (n=160) males and 47.4% (n=144) females. Prevalence of dental caries was 38.5% (n=117) and five had caries in both primary and permanent teeth. The mean total dmft/DMFT score was 1.184/0.019. Among male students, 38.1% (n=61) had decayed teeth and the dmft/DMFT score was 1.156/0.006 and among female students 38.9 (56%) had decayed teeth and the dmft/DMFT score was 1.215/0.013 respectively. Majority (>70%) of mothers were between the age group 31 -40 years. Mean age was 35.27 years (SD ± 4.658). Most (n=214, >70%) were educated above A/L and nearly quarter were employed. Mean monthly family income was Rs. 47708.88 (SD ± 22802.3). There was a statistically significant association between lower educational level of mother and prevalence of caries (p<0.05).However, employment status of mothers, type of employment and monthly income levels were not associated with the presence of healthy teeth (p > 0.05).

Conclusions & Recommendations: Prevalence of dental caries was 38.5%, which is less than National Health statistics for 2015. There was a strong association between the education levels of mother and prevalence of caries in their children.

Key words: *Dental caries, DMFT, Prevalence, Schoolchildren, Mothers*

OP 037

Factors affecting nausea and vomiting of pregnant women attending the maternal and child health clinic in Tangalle Medical Officer of Health (MOH) Area

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Background: Nausea and Vomiting in Pregnancy (NVP) usually begins in the first trimester of pregnancy and resolves by the 3rd. Eighty percent (80%) of pregnant mothers are suffering from NVP. Various risk factors have been implicated but exact pathogenesis has not been established yet. It is important to identify risk factors as severity and burden of NVP has a significant impact on the quality of life of pregnant mothers and also affects their willingness to become pregnant again.

Aims: To identify the sociodemographic, psychological, physical and biological factors affecting NVP.

Methods: The study was conducted as a community based analytical cross sectional study. The data were collected from a sample of 302 participants. A pretested questionnaire was distributed among pregnant women attending Maternal and Child Health Clinics in Tangalle MOH area. Statistical analysis was carried out and association between factors was evaluated using chi square test, odd ratios and multiple logistic regression.

Results: Response rate was ninety eight percent (98%, N= 298). Nearly eighty four percent (n= 255) mothers of the study population suffered from NVP. The factors that were associated with NVP were being primi mothers (OR = 3.723, p = 0.001), iron supplementation (OR = 7.832, p = 0.001), folic acid supplementation (OR = 5.649, p = 0.001), hormonal contraceptives before this pregnancy (OR=1.478, p= 0.018), carrying male fetus (OR = 4.872, p = 0.002), fluid intake in morning (OR = 16.937, p = 0.001), consuming a diet containing lipids (OR =77.838, p = 0.001), engagement in exercises (OR = 5.339, p = 0.001) and brushing teeth (OR = 14.207, p = 0.001). These nine factors demonstrated positive association with the incidence of NVP in Multiple Logistic Regression. Expected pregnancy (OR = 0.323, p = 0.022), hypothyroidism (OR = 0.347, p = 0.047) and sleeping pattern (OR = 0.068, p = 0.001) were the factors that demonstrated negative association with the incidence of NVP.

Conclusions & Recommendations: NVP is very common and to reduce the burden of NVP proper health education regarding modifiable risk factors and lifestyle modifications should be provided.

Keywords: *NVP, Maternal Health, Gravidity*

OP 038

Risk factors of preterm births in the government hospitals of Colombo District

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Background: Preterm births, defined as babies born before completing 37 weeks or 259 days of gestation is a global and local challenge as the major contributor to neonatal and child mortality. Health, economical and psychological burden due to preterm births are public health concerns. Even with a low neonatal mortality rate, Sri Lanka toils to care for preterm babies. Recent quality data on factors contributing to preterm birth are not readily available to formulate preventive strategies.

Aims: To determine the antenatal risk factors of preterm births in the government hospitals of Colombo District

Methods: An unmatched case-control study was conducted to identify risk factors of preterm births (cases=374, controls=374) in all government hospitals with obstetric and paediatric/ neonatal care facilities in Colombo District. Live-born, both spontaneous and provider-initiated, preterm babies of 24^{+0} to 36^{+6} weeks were selected as cases and live-born term babies of >=37 weeks were selected as controls at a ratio of 1:1 among whose mothers had a dating scan before 22 weeks. The "Best Obstetric Estimate" of American College of Obstetrician and Gynecologists was used to identify preterms. A multivariate analysis was conducted.

Results: The population comprised 4% (n=15) extremely, 9.1% (n=34) very, 11.8% (n=44) moderate, and 75.1% (n=281) late preterm babies. Key risk factors of preterm births in the multivariate analysis included: multiple pregnancy (aOR=10.57, 95% CI:3.48-32.08), bleeding/ spotting during pregnancy (aOR=3.51, 95% CI:1.77– 6.98), past preterm birth (aOR=2.83, 95% CI: 1.09-7.36), recent stressful life event (aOR=2.62, 95% CI1.43-4.81), higher gravidity (aOR=2.58, 95% CI:1.35-4.90), unsatisfied own health (aOR=2.54, 95% CI:1.52-4.22), pregnancy induced hypertension (aOR=2.25, 95% CI:1.16-4.38), absence of dental assessment (aOR=2.16, 95% CI:1.23-3.81), unsatisfactory oral hygiene (aOR=2.01, 95% CI:1.33-3.04), longer standing during 3rd trimester (aOR=1.91, 95% CI:1.24–2.94) and cooking using firewood (aOR=1.51, 95% CI:1.01–2.25). No recent sexual intercourse (aOR =0.46, 95% CI: 0.26 -0.81) was a protective factor.

Conclusions & Recommendations: This study identified 11 risk factors and one protective factor for preterm births. Modifiable risk factors of preterm births should be made aware to all relevant stakeholders for the formulation of preventive strategies.

Keywords: *Preterm birth, Risk factor*

OP 039

What explains the decline in neonatal mortality in India in the last three decades? Evidence from three rounds of NFHS surveys

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Background: Although existing scholarship has identified the key determinants of infant and child mortality in India, it is silent on the contribution of specific determinants to the decline in neonatal mortality. Therefore, there is a need to estimate specific contributions of various factors to the changes in the neonatal mortality in India.

Aims: To examine trends in neonatal mortality rate (NMR) in India. The paper also aims to estimate the contribution of different factors to the change in neonatal mortality in India in the last three decades.

Methods: We used data from the 1992-93, 2005-06, and 2015-16 National Family Health Surveys to examine trends in neonatal mortality. For this purpose, we used information on most recent births in 1-47 months preceding the respective surveys. We used multivariable decomposition to estimate the contribution of different factors to the change in neonatal mortality in India in the last three decades. Finally, we carried out sensitivity analysis to check the robustness of our findings.

Results: When limited to most recent births in 1-47 months preceding the surveys, seventy percent of the decline in neonatal mortality during 1992-2016 is due to increase in the coverage of various factors. Improvement in coverage of 'mother's schooling' and 'at least two Tetanus Toxoid injections' contributed maximum followed by the improvement in coverage of 'three or more antenatal visits', 'clean fuel for cooking' and 'birth order'. Change in benefits of 'access to improved water', 'delivery in a medical facility' and 'mother's schooling' has led to a decline of 3, 2, and 1 points, respectively.

Conclusions & recommendations: The analysis suggests that the reduction in NMR between 1992-93 and 2015-16 was mostly driven by changes in the distribution of various factors during the study period rather than the changes in effect of the factors. More investments in maternal and child health programmes (including family planning) and providing access to clean fuel for cooking are likely to further reduce high level of neonatal mortality in India.

Key words*: Neonatal mortality, Multivariable decomposition, National Family Health Survey, India*

Oral Presentations

Day 1: 19th September 2019, 11:00 am - 1:00 pm, Oak Room 1

FREE PAPER SESSION 5: HEALTH SERVICES

Chairpersons : Dr. Anmol Gupta   **Dr. R. Kesawan**

OP 041

Quality of provision of immunization Services in Ratnapura district, Sri Lanka: Recipient and provider perspectives

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Background: Over the years Sri Lanka has reported nearly 100% coverage for all vaccines in the Expanded Programme on Immunization, and a low incidence of vaccine preventable diseases. Maintaining high-quality immunization service delivery is essential to gain public trust for future success.

Aims: To identify the key factors associated with the quality of routine immunization services in Ratnapura district from the perspective of service providers and recipients.

Methods: A mixed method cross-sectional study was conducted in five purposely selected Medical Officer of Health (MOH) areas (Ratnapura Pradeshiya Shaba, Pelmadulla, Kuruwita, Embilipitiya and Balangoda). These were the MOH areas with the highest clinic attendance in Ratnapura district. Data collection was carried out using pretested self-administered questionnaires, client exit interviews, focus group discussions (FGDs) and an observation check list. Ethical Approval was obtained from Sri Lanka Medical Association.

Results: Infrastructure and logistic facilities such as limited space, inadequate seating facilities, insufficient supervision, and limited number of Public Health Midwives (on average 11 to 29 children / PHM) were identified as factors that affect the quality of immunization services. Sub-optimal preparation for clinic activities caused delays in service provision and limited staff increases workload for each service provider. Waiting time at sessions ranges from 1.00 to 3.30 hours/clinic in the five clinics. FGDs revealed only one of the five MOH areas has organized regular in-service training for vaccine administration, Information Technology and language courses to improve technical and communication capacities. Main concerns of PHMM were the limited opportunities for training, heavy workload and documentation procedures which consume considerable time. Majority (62.5%, n=40) of service receivers were able get all the services within 2 hours of their arrival and 85.9% (n=55) of service receivers were satisfied about the services they received at the clinic center. However, they expressed their concerns on overcrowding, lack of seating facilities and absence of an appropriate appointment system.

Conclusions & Recommendations: Establishing regular monitoring mechanism, conducting regular in-service training and reorganizing clinic settings in a systematic manner may ensure provision of high quality immunization services at field level with the available resources.

Key words: *Quality, Immunization services, Ratnapura, Sri Lanka*

OP 042

Knowledge, practices and the factors associated with Mother Baby Friendly Initiative among healthcare workers at a teaching hospital

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Background: In 2014, International Federation of Gynaecology and Obstetrics (FIGO) settled guiding principles for Mother Baby Friendly Birthing Facility. These are evidence based, simple, cost effective measures aiming to reduce maternal and neonatal morbidity and mortality. This initiative warrants correct knowledge and practices of healthcare workers.

Aims: To describe the knowledge, practices and the factors associated with Mother Baby Friendly Initiative among healthcare workers at a teaching hospital in Sri Lanka.

Methods: A descriptive cross sectional study was conducted at Colombo South Teaching Hospital among 246 healthcare workers of maternal, new-born and child health working stations. A self-administered questionnaire was used for data collection. Knowledge and practices were assessed by a set of questions developed based on FIGO and other maternal guidelines. Percentages and mean values were used to describe variables while associations were tested using Chi square test.

Results: Mean age of the participants was 36.5 years (SD=8.1). Mean years of service for them was 12.3 years. 48% of the participants were nursing officers. More than 90 % of participants had correct knowledge of partographic monitoring in labour and importance of keeping mother baby dyed together as much as possible. 50% of the participants had correct knowledge on allowing free movements in first stage of labour, allowing to choose birthing position and a companion of choice. More than 85% of participants had correct knowledge on existence of the breastfeeding policy, importance of educating mothers, identifying hunger cues and not use of pacifiers and teats, but only 41% agreed that a mother should continue to breastfeed if she develops mastitis. Routine vaginal examination and episiotomy without clear medical need was practiced by nearly 40% latching the baby to breast to initiate breastfeeding by 52.5%. While more than 90% practiced demonstration of positioning and attachment, only less than 40% demonstrated expressing breast milk and cup feeds. Practices of cup feeding and attachment of baby

for feeds showed significant association with breastfeeding counselling training (p<0.05).

Conclusions & Recommendations: There is a very clear need on further training to enhance knowledge and practices.

Key words: *Mother Baby Friendly Initiative, Health care workers, Knowledge, Practices*

OP 043

Conducting Medical Officer of Health monthly conference effectively using the "Guidelines for conducting monthly and local conference at the Medical Officer of Health areas"

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Background: Medical officer of Health monthly conference is conducted in each MOH area to review progress, appraise and motivate staff to enhance team spirit, plan for the future activities and to strengthen the administrative functions. A circular issued by the Ministry of Health in 2015, which consists of five main sections, provides guidelines on conduct of monthly conference; Performance review, administrative procedures, sharing knowledge gained and identification of training needs, review and planning of activities, solving problems through consensus.

Aims: To describe how to conduct the MOH monthly conference effectively by evaluating the strengths and weaknesses of the present circular 01-18/2015 "Guidelines for conducting monthly and local conference at the Medical Officer of Health areas".

Methods: This is a health systems qualitative study. Data were collected through three small group discussions on different sections of the above circular, held at National Institute of Health Sciences (NIHS), Kalutara among the MD trainees in Community Medicine who have worked as MOH or have been exposed to monthly conferences. This was followed by an experience sharing session involving the trainees, two Consultant Community Physicians and one Consultant in Community Dentistry. Subsequent discussions were held with the district and divisional level field staff at NIHS monthly conference to ascertain the issues in conducting conference according to the circular. The consensus reached following the discussions is presented as the way forward in improving the conduct of monthly conference.

Results: Monthly conference needs to ensure the performance review of all categories of field staff. At present proformance review of all categories in different service areas does not happend uniformly. It was agreed that it is better supervisory officers present the performance of relevant staff accordingly to a predesigned uniform PowerPoint format which will provide a unique chance to review the performance in all service areas of all staff. Key findings of monthly supervisions need to be discussed by the supervisory officers (MOH, AMOH, PHNS, SPHM and SPHI) in brief. Administrative and management procedures need to be strengthened and MOH has to undertake all management functions during the conference including operational and strategic planning. Operational plans as well

as the strategic plans need to be available with the MOH for review of the progress. Annual plan of the MOH needs to be reviewed with new programs and targets. Key performance indicators for public health programs for review need to be identified. Some pertinent issues such as conflict resolution, sharing of success stories, getting feedbacks from the staff need to be entertained. Motivation through feedback needs to be strengthened at the monthly conference.

Conclusions and Recommendations: The present circular needs to be revised accordingly to meet its objectives. New inclusions will help to conduct MOH monthly conference effectively.

Key words: *MOH monthly conference, Present circular, Performance review, Key performance indicators*

OP 044

Appraisal of trends of quality of health care delivery in India: A textual synthesis review

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Background: Inaccessibility and poor quality of health care delivery remains a hurdle in achieving Universal Health Coverage and Sustainable Developmental Goals in low middle- income countries. Health care accessibility and quality of health care delivery can be assessed through certain positive indicators like immunization coverage, institutional deliveries and Health Care Accessibility and Quality Index (HAQI) and through some negative indicators like Infant Mortality Rate and Maternal Mortality Ratio. These negative indicators can be taken care of by improvement in health care accessibility and quality of health care delivery. Although India is facing the problem related to health care delivery to the people, it is moving towards its SDGs targets through health system strengthening.

Aims: To assess the trends of health care delivery service indicators in India and to to explore the attributes of quality of health care delivery.

Methods: A total of 237 articles and reports were selected for the review through PubMed and only authorized published reports were selected from Google Scholar and also some unpublished reports were included in the review which were accessed directly from government websites. Based on inclusion and exclusion criteria 30 articles and reports were shortlisted for the review to Calculate Health care Quality Index and to appraise trends of quality of health care delivery in India.

Results: Results show data on infant mortality and maternal mortality and also on Health Care Accessibility and Quality Index (HAQI). In India IMR per 1000 live births was 66 in 2001 and in 2016 it reduced to 34. This 48.5% decrease in IMR was due to implementation of Universal Immunization Program, Newborn Action Plan, Infant & Young Child Feeding Program, Janani Shishu Suraksha Karyakaram and Measles, Rubella Campaign. Trend also shows that immunization coverage was 42% in 2001 and it increased up to 62% in 2016. The reduction of MMR by 56.8% from 2001 to 2016 is attributed to Reproductive, Maternal, Newborn, Child & Adolescents Health Program, National

Health Mission and International Child Development Programs. Results also show that from 2001 to 2016 institutional deliveries coverage increased from 34% to 78.9%. A total of 42 indicators were included to assess health care accessibility and quality of health care. From 2001 to 2016 HAQI of India increased from 35.3 to 44.8.

Conclusion: It has been observed that health care delivery indicators in the form of immunization coverage, institutional deliveries and HAQI have improved with time. Different health programs, schemes and policies were found to be attributed for this improvement in health care delivery in India.

Key Words: *Quality of health care, Health care delivery, Maternal Mortality, Universal Health Coverage, India.*

OP 045

Knowledge, attitudes and practices on vaccine cold chain maintenance to ensure quality of vaccines in National Immunization Programme and associated factors among Public Health Midwives at Medical Officer of Health offices in Central Province.

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Background: Immunization is the most cost-effective intervention in preventing vaccine preventable diseases. Well-trained public health staff on cold chain maintenance is critical to ensure potency and safety of vaccines.

Aims: Study aimed to assess knowledge, attitudes, practices and associated factors among Public Health Midwives (PHMM) on vaccine cold chain maintenance to ensure vaccine quality in National Immunization Programme at Medical Officer of Health (MOH) offices in the Central Province.

Methods: Descriptive cross-sectional study was done among PHMM in MOH offices in the Central Province. Multi-stage cluster sampling was adopted. A self-administered questionnaire was used to collect data from 586 participants. Knowledge, attitudes, and practices on vaccine cold chain maintenance were assessed using scoring systems and Likert scales. Data were analyzed using SPSS (v-21). Significance of associated factors were presented at level 0.05 for knowledge, attitudes, and practices on vaccine cold chain maintenance.

Results: Response rate was 98% (n=586). Participants' mean age (SD) was 41 years (10). Majority were Sinhalese (93%, n=544), Buddhists (92%, n=538) and qualified in GCE Advanced Level examination (64%, n=372). Based on scored scales developed, the majority (96%, n=563) had "satisfactory" or "good" knowledge and "favourable" attitudes (75%, n=437) on vaccine cold chain maintenance. Different practices on vaccine handling assessed were "good" among the majority but consciousness on preventing sunlight exposure was poor (3%, n=15) as all clinics were sheltered and foam-pad use at clinics (12%, n=70) identified as "poor". Almost all (95%, n=556) correctly interpreted the essential practice of reading heat exposure indicator (VVM). Age (p<0.05) and experience (p<0.05) showed significant association with knowledge but other factors such as training, means of gaining knowledge and being supervised had no significant associations. Attitude

on adhering to recommended guidelines had significant association between methods of training received (p<0.05) and of obtaining cold chain knowledge (p<0.05). Majority (80%, n=469) perceived requirement of regular cold chain self-assessment tool to be available at the MOH level.

Conclusions & Recommendations: PHMM knowledge, attitude and practices were satisfactory on vaccine cold chain maintenance. Further strengthening can be done through periodic training, supportive supervision and introducing self-assessment tool on vaccine cold chain maintenance to ensure quality and safety of vaccines.

Keywords: *Cold chain, PHM*

OP 046

Satisfaction on time allocation for different aspects of service provisions among Public Health Midwives in selected Medical Officer of Health areas in Galle District, Sri Lanka

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Background: Public Health Midwives (PHMs) are the ground level care providers in the society. Satisfaction on time allocation of PHMs has a direct effect on their service. Evaluating PHMs' satisfaction on their time allocation for service provision would emphasize the authorities to take appropriate actions to improve their service delivery.

Aims: To evaluate the level of satisfaction on time allocation of the PHMs' in their service provision.

Methods: A descriptive cross-sectional study was conducted with 58 PHMs out of 66 PHMs in 4 Medical Officer of Health (MOH) areas in Galle district. A self-administered, pre-tested questionnaire was used. Data were analyzed by using SPSS 20.0 with descriptive analysis.

Results: Among the PHMs, 44.8% (n=26) were mostly satisfied about the time they spend for clinic care (Mean±SD, 3.28 hours ±1.11). 58.6% (n=17) had average satisfaction with the time they spend for home visits (Mean±SD, 2.66 hours ±1.04) and 41.4% (n=24) PHMs were in average satisfaction with the time allocated for in-service training (Mean ±SD, 2.38 ±0.91). Among them, 43.1% (25) of PHMs were in average satisfaction regarding maternal and child health (MCH) services in Sri Lanka (Mean±SD, 4.09 hours ±0.76) and 63.8% (n=37) PHMs were generally satisfied with their personal contribution to the MCH services of the country (Mean±SD, 4.55 hours ±0.68). Nearly half of them (51.7%, n=30) were not satisfied with the time they got for working in the office (Mean±SD, 1.83 hours ±0.96) and 43.1% (n=25) were not mostly satisfied with the time they have to spend for other public health activities (Mean ±SD, 2.45 hours ±0.86).

Conclusions & Recommendations: Satisfaction on time allocation for clinical care, MCH services, home visits and in-service training are at a higher rate among PHMs; however, satisfaction was poor for the time allocation for working in the office and other public health activities. Measures to enhance the office work more efficient such as improving computer literacy and statistical analysis would improve their satisfaction on time allocation for office work.

More research is neeeded to explore the factors affecting their satisfaction in each domain.

Key words: *Perception of time allocation, Service provision, Public health midwives*

OP 047

Vaccine coverage survey, Timor-Leste, 2018: Advantages and challenges in new vaccine coverage cluster survey methodology

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Background: Timor-Leste is an island at the eastern end of the Indonesian archipelago with an estimated total population of 1.2 million. The population census 2010 gave a projected birth cohort of 40351 for 2014. But the cohort size was found to be 33710 in 2016 based on the population census conducted in 2015. This reduction in the birth cohort causes a sudden rise in the coverage estimates for the first two years of life based on data reported routinely. Hence, a vaccine coverage evaluation survey was planned according to the new guidance published by the World Health Organization in 2018.

Aims: To estimate the vaccine coverages in the first and second years of life as per the national schedule

Methods: Children who were 12-23 months and 24-35 months old at the time of the survey were studied as separate cohorts for their first and second year of life vaccinations respectively. The new vaccine coverage survey methodology uses probability sampling. Parameters used for sample size calculation were the expected vaccine coverage of 50%, desired precision ±7% with ±5% alpha error, which resulted in 207 children per each cohort. The primary sampling unit was the census enumeration area. Assumed non-response rate and design effect were 5% and 1.45 respectively. The final sample size was 301 per cohort. Three children were expected to enrol from each cluster per cohort and expected to find one eligible child in every 8th household from the 26 selected per cluster. A nationally representative sample of 101 clusters was selected, probability proportional to the size of the population. Data were collected using interviewer-administered questionnaire. The home-based records and health facility records were referred to extract date of vaccinations. The selected households were identified on the field using paper maps and Global Positioning System (GPS) receivers. An independent group of external supervisors verified the survey protocol adherence.

Results: In the first year of life cohort, the estimated highest crude dose coverage was 94.7% (95% CI: 91.7-97.0) for BCG. The lowest crude dose coverage was reported for hepatitis birth dose, 66.2% (95% CI: 58.5-73.0). Among the infants, 4.8% (95% CI: 2.9-8.0) had never been vaccinated. DTP 4th and the MR 2nd doses in the second year of life were also low at 54.8% (95% CI: 46.5-63.0) and 54.4% (95% CI: 46.1-62.0) respectively. The estimated design effect was 1.74.

Conclusions & Recommendations: The National Immunization Program of Timor-Leste should strive to achieve the global vaccine action plan targets for all vaccines in use. The drop-out and missed out rates need to be further reduced. The new methodology is technically more robust and feasible. However, training of surveyors is challenging when compared to 30x7 cluster survey practised earlier. The sample size calculation depends on reliable data for birth rate, infant mortality rate and average household size. Hense, current methodology is relatively difficult to be practised in a country where civil registration system is not functioning. Similarly, considerable resources need to be invested when the required maps, GPS are not readily available.

Keywords: *Vaccine, Survey, Immunization, Coverage, Crude, Timor-Leste*

OP 048

Evaluation of drug utilization of health training centres of a tertiary care teaching hospital in a hilly state of north India

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Background: Drug inventory management tools are needed to be applied in routine for efficient management of the pharmacy stores as it contributes not only in improvement in patient care but also to judicious use of resources as well. Health training centres are peripheral health posts for delivery of preventive, promotive and curative services. Drug inventory control is a scientific system which indicates as to what to order, when to order and how much to order, and how much to stock so that purchasing costs and storing costs are kept as low as possible.

Aims: To assess and analyse the drugs utilisation at health training centres

Methods: Drug utilisation from all of the health training centres under department of community medicine at Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Dehradun, Uttarakhand India. Data of last one-year duration were collected and categorized so as to develop a matrix based on coupling of cost (always, better and control) analysis - ABC Analysis and criticality (vital, essential and desirable) analysis – VED Analysis.

Results: Cost based ABC analysis yielded the following: 23.33% (28), 20.83% (25) & 55.83% (67) items were found to be of always, better and control categories respectively. According to criticality based VED analysis of the present study showed 7.5% (9) items were found in vital category followed by 53.33% (64) and 39.17 (47) in essential & desirable categories respectively. On cost and criticality matrix it was found that there were 31 (26%) items in class I, 61 (51%) items in class II and 28 (23%) items in class III.

Conclusions & Recommendations: ABC and VED analysis identified the drugs requiring stringent control for optimal use of funds and elimination of out-of-stock situations in the health training centers. Every drug pharmacy should undergo regular periodic cost and critical drug utilization analysis for optimum and adequate drug supply.

OP 049

An assessment of performance of selected components of rehabilitation service providers in teaching and special hospitals in the Western Province of Sri Lanka

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Background: Level of performance is a key component of health service delivery. Measuring the level of performance is important to improve rehabilitation services. It may be associated with the factors related to the person, environment and to the availability of equipment and technology.

Aims: The aim of the study was to assess the level of work performance and its associated factors among physiotherapists and occupational therapists in Teaching Hospitals and Special Hospitals in the Western Province of Sri Lanka.

Methods: A descriptive cross sectional study was conducted among all currently employed physiotherapists (n= 204) and occupational therapists (n=61) in 12 hospitals. A validated, pre tested, self-administered questionnaire was used for data collection.

Results: Response rates of physiotherapists and occupational therapists were 57% (n=117) and 65% (n=40) respectively. The mean values for task performance, contextual performance and counterproductive work behaviour scores were 3.61 out of 5 (+/- 0.773 SD), 3.53 out of 8 (+/- 0.737SD) and 1.43 out of 5 respectively. Mean values of these scores lied between 50th and 70th percentiles which indicated average level of work performance. Analysis by Pearson correlation showed that knowledge of the rehabilitation service providers had a significant association with all three types of performance measures ($p<0.05$), while level of income and work schedules had significant association only with task performance and contextual performance measures ($p<0.05$).

Conclusions & Recommendations: It is recommended to measure work performance of health services in all hospitals for other related staff as well (nurses, technical assistants, medical officers etc.), in a broader scale to improve service delivery. Specific training can be identified and regulated, structured training and education opportunities (i.e. professional qualifications) can be arranged according to the needs.

Key words: *Rehabilitation Service, Performance*

OP 050

Evaluation of programmatic management of drug resistant tuberculosis in three states of North India: A cross-sectional study

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Background: In India, Programmatic Management of Drug Resistant Tuberculosis (PMDT) was launched in year 2007 for management of drug resistant tuberculosis (DR-TB). Its evaluation forms the backbone for improving the quality and effectiveness.

Aims: To evaluate the level of implementation of PMDT services in three states of Northern India

Methods: Mixed methods (qualitative and quantitative) were used for evaluation of PMDT in three states of northern India on basis of case finding, treatment and program management. From each state one DR-TB centre, one district/ DR-TB centre, 2 designated microscopy centres (DMC) / district and 2-3 DR TB patients were randomly selected. Structured evaluation tools were used to collect relevant information by reviewing reports and registers maintained under the program for five years (2012-2017). State TB officers, TB officers of selected districts, medical officers and microbiologists of state reference laboratories were interviewed along with DR-TB patients. Microsoft excel was used for computation of various indicators and interstate comparison.

Results: Program management human resource status was assessed at all levels and 77% (644/831), 66% (453/687) & 91% (835/918) of posts were found to be filled against sanctioned posts in states of Punjab, Himachal Pradesh (HP) and Delhi. All the DR-TB centres, DMC and CBNAAT machines were functional in all the three states. No private sector involvement was observed in 3 states. Case finding was assessed using DR-TB notification rates which ranged from 2-7.2 /100,000 population across the states with the highest in Delhi. Isoniazid & Rifampicin resistance (H&R) detection rates were 4% (/2791), 1% (/1380) & 6% (/1115) for Punjab, HP & Delhi. Among the diagnosed patients 118%, 99% and 88% were put on treatment in states of Delhi, Punjab & Himachal Pradesh. Treatment outcome was measured in terms of cure rates which varied between 35-40%.

Conclusions & Recommendations: Human resource shortfalls and lack of training was observed at varying degrees in all the three states which needs to be addressed as a priority as they could help in improving low cure rates. Case findings were lowest in HP which were due to hilly terrain and decreased accessibility to health services. Private sector involvement can increase case notification rates. Repeated evaluation studies need to be conducted to identify the shortfalls in the program and timely rectification can be done.

Key words: *Evaluation, Drug-resistant tuberculosis, Cure rate, Notification rate, Drug resistant tuberculosis*

OP 051

Assessment of receipt of essential follow up stroke care services among stroke survivors of Sri Lanka

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Background: Prevalence of stroke among Sri Lankan population is 1%. Timely availability of multidisciplinary follow-up stroke care services limit the disabilities.

Aims: To access the receipt of essential follow up care services among stroke survivors during first six months of post stroke period

Methods: A descriptive cross-sectional study was conducted among 363 stroke survivors Six months after stoke onset, recruited from 11 secondary and tertiary care hospitals of western province. Assessment of the receipt of six categories of essential follow-up care services (services to monitor risk conditions; treatment to prevent further stroke; limit disabilities; prevent complications; modify life style and services related to socioeconomic status) identified by a group of experts were done by trained interviewers by visiting the survivors in their homes. The survivors were classified as having had a 'very good', 'good', 'fair' or 'poor' level of receipt of follow up stroke services in relation to each category based on whether they received > 75%, 51-75%, 50%-26% and =<25% of the respective services.

Results: Only 9.6%, of the study participants received 'very good' level of care related to risk factor monitoring (95% CI, 6.57-12.63), while 59.8% received 'very good' level of follow up care treatment services (95% CI, 54.76-64.48). More than half (55.1%) had received poor services to limit disabilities (95% CI, 49.9- 60.2), and to prevent complications (54%,95% CI 48.9-59.1). Approximately one third (36.6%) had received poor services to modify life style (95% CI, 31.6- 41.6). None had received very good support services to upliftment of socioeconomic status.

Conclusions & Recommendations: The proportion of stroke survivors who had received acceptable levels of essential follow-up stroke care services was low apart from treatment services. It is recommended to improve stroke service delivery model to ensure receipt of all services by survivors.

Key words: *Stroke, Follow up-care, Coverage*

OP 052

Continuing professional development in nursing: Opportunities and experiences at a tertiary care hospital in Sri Lanka

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Background: Continuing professional development (CPD) is a must for improving knowledge, attitudes and skills of a professional. CPD helps to keep the professional up to date in order to maintain quality of service delivery. Nursing profession is no exception.

Aims: To assess continuing professional development of staff nurses at District General Hospital Chilaw

Methods: A descriptive cross-sectional study was carried out in District General Hospital Chilaw involving total population of permanent staff nurses. Secondary data on CPD programmes in year 2017 were collected from training databases. Data from staff nurses were collected using a pre-tested self-administered questionnaire to assess CPD opportunities, nurses' participation to CPD programmes and nurses' perception towards CPD.

Results: Secondary data revealed that there were 78 training programmes in 2017 for nurses and 52.5% (n=41) were organized by the hospital. Primary data were collected from 202 respondents. Of those 18.8% (n=38) did not get any opportunity to apply for CPD during their carrier. However, out of those who applied, 98.2% (n=161) got opportunity to participate. From all CPD participants, 59.2% (n=96) had participated in three or less programmes during the last three years. When considering the motives for CPD participation, improving knowledge (98.1%, n=156) and skills (95.6%, n=152) were prominent. Low priority for CPD (83.2%, n=134) at the institution level was the main barrier for participation. Participation was higher for in-house short trainings (52.2%, n=84) using mixed methods (60%, n=98). Nurses' willingness to accept some incentives for CPD participation was 92% (n=186). Knowledge on concept of CPD was good in 50.1% (n=102) of nurses and 80.7% (n=163) had favourable attitudes towards CPD. Age of the youngest child, presence of dependents at home, work experience, nature of the duty and knowledge on CPD were more likely to have association with nurses' CPD participation (p<0.05).

Conclusions & Recommendations: It is evident that establishing database for CPD programmes, system to communicate the opportunities in advance, facilitation of in-house trainings and incorporation of importance of CPD into nursing curriculum will help to improve nurses' participation in CPD.

Key words: *Continuing professional development, Staff nurses, Tertiary care*

OP 053

Factors associated with knowledge on individual level climate change adaptation and mitigation: A descriptive study among school teachers in Kalutara district

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Background: Climate change is a reality and living and coping with it is no longer an option but an imperative. Being the biggest global health threat of the 21st century it calls for action at all levels where individual level adaptation and mitigation actions may impose a significant global impact.

Aims: To determine factors associated with individual level climate change adaptation and mitigation among school teachers in Kalutara district

Methods: A descriptive study was done in 2017 among 618 school teachers in three educational zones of Kalutara district selected using random cluster sampling from 106 Type1AB and Type 1C schools. A self-administered questionnaire of equally weighted questions was used and a final knowledge score was calculated out of 100. Knowledge scores were then categorized into poor [<50], satisfactory [50-75] and good [>75]. Association of knowledge with socio demographic and work related factors were analysed using chi square test with a confidence level of 95% [α= 0.05]. Probability level [p value] of <0.05 was considered as having significant association.

Results: The response rate was 98.8% [n=618] and more than 95% of the study population agreed that the global warming is happening. It was revealed that 23% of the study population had poor knowledge. Average family income [p=0.001], working duration [p=0.001], involvement in school environmental societies [p=0.001] and highest educational qualification [p=0.001] showed statistically significant positive association with good knowledge whereas age [p=0.001] and current grade [p=0.001] had a statistically significant negative association with good knowledge. Level of knowledge had no significant association with having had training on climate change [p=0.162] or gender [p=0.411].

Conclusions & Recommendations: Overall knowledge was poor among more than 20% of the teachers highlighting the need for awareness programs. Need for further qualitative studies was recognised in order to describe multidimensional factors associated with knowledge on individual level climate change adaptation and mitigation to implement targeted interventions.

Key words: *Climate Change, Adaptation, Mitigation, School Teachers*

OP 054

Exposure to sexual explicit material, sexual behavior and associated factors among undergraduates of three selected faculties of University of Colombo

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Background: Youth are naturally sexually curious with hormonal changes. They tend to seek sexual information and pleasure through Sexual Explicit Material (SEM). With advances in technology and wide spread of accessible, affordable, unlimited SEM, there is a need to assess the SEM exposure among youth.

Aims: To assess the exposure to SEM, sexual behaviour and associated factors among youth in three selected faculties of University of Colombo.

Methods: The study was an institutional based cross-sectional analytical survey among 425, 2nd year undergraduates of three selected faculties of University of Colombo in 2018. Study participants were selected by probability proportionate to the size using multi stage random sampling. A structured, pre tested, pre coded self-administered questionnaire was used to assess exposure to SEM, sexual behaviour and associated factors such as family context, environmental factors and risky behaviours. Data analyzed using SPSS-21 and presented with frequency distributions and cross tabulations. The chi square test and Odd Ratio (OR) were used to assess the associations of categorical variables.

Results: SEM exposure was 77.9% (n=317) among undergraduates with more males (93.2%, n=177) being exposed than females (68.9%, n=140). SEM was obtained mostly through friends (56.8%, n=150) and watched mostly via internet (76.1%, n=216). Undergraduates watched SEM for curiosity (53.1%, n=155) and sexual education (53.1%, n=155). Prevalence of pre-marital sex was 11.8% (n=42) among them. 5.9% (n=3) had sex with commercial sex workers, 32.6% (n=14) had multiple sexual partners and the proportion never used condoms was 58.8% (n=30). Ever had sex status, perceiving SEM as beneficial and having seen fantasizing images were significantly associated with SEM at p<0.001 with respective ORs of 8.4 (CI: 1.9-35.1), 10.8 (CI: 5.3-21.8) and 9.1 (CI: 4.3-19.0). SEM exposure was associated with alcohol consumption (OR=12.5, CI: 3.8-40.7, p<0.001) and smoking (OR:1.3, CI: 1.2-1.4, p<0.001). Presence of internet at home and internet being sexual education source were significantly associated with SEM consumption with respective ORs of 2.2 (CI: 1.2-4.0, p=0.01) and 10.8 (CI: 5.1-22.9, p<0.001).

Conclusions & Recommendation: Study revealed a high prevalence of students exposed SEM. Study recommends strengthening sexual education and counselling to prevent learning sexuality from unhealthy sources.

Key words: *Sexual explicit materials, Pornography, Sexual behaviour*

OP 055

Promotion of health and well-being of teachers: Is it a public health need in Sri Lanka?

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Background: Teachers have a great impact on the education system, students intellectual & psychosocial development and thereby the economic growth and societal integrity. While being a rewarding profession, teaching involves prolonged standing, voice exhaustion and high workload making teachers vulnerable to many occupational health problems.

Aims: To determine the prevalence of musculoskeletal pain, voice disorders, headache disorders and burnout among secondary school teachers in Colombo district to explore baseline information necessary to promote health and wellbeing among teachers in Sri Lanka.

Methods: A cross-sectional descriptive study included 1426 secondary teachers selected by a multistage cluster sampling method from public schools of Colombo district. Musculoskeletal pain, voice disorders, headache disorders, and burnout were identified using validated and culturally adapted self-administered tools. We modified Nordic Musculoskeletal Questionnaire to assess the musculoskeletal pain and effects on routine schoolwork. Voice Handicap Index-10 assessed the voice handicap. The Headache History Questionnaire and Maslach Burnout Inventory-Educator versions assessed headache disorders and burnout.

Results: Response rate was 95.1% (N=1426). Both mean & median age of the study sample was 44 years (SD+8.9) & 44 years (IQR=37 to 51 years), respectively. The majority were in 41 to 50 year age group (n=514, 36%) & females (n=1203, 84.4%). Approximately one third (n=421, 29.5%) had obtained a post-graduate degree & had work experience of 1-10 years (n=477, 33.5%). Prevalence of musculoskeletal pain in neck and/or upper limb/s was 33.8% (95% CI:30.8%-36.7%) while prevalence of lower back and lower limb/s were 32.9% (95% CI:30.0%-35.8%) and 38.1% (95% CI:35.1%-41.1%). Prevalence of voice handicap was 52.7% (95% CI: 50.2%-55.2%), and self-reported voice impairment was 65.9% (95% CI: 62.9%-68.8%). The prevalence of any headache disorder was 46.4% (95% CI: 43.3%-49.4%) with tension type headache and migraine being 7.8% (95% CI: 6.5%-9.4%) and 2.9% (95% CI: 2.2%-3.9%). Prevalence of burnout was 40.1% (95% CI: 37.1%-43.1%).

Conclusion & Recommendations: Prevalence of studied work related health problems are high among secondary teachers. Implementation of strategies to promote health and wellbeing of teachers is recommended due to the impact of teacher's role on public health.

Key words: *TSI-Sinhala, Occupational stress, Burnout, Voice disorders*

OP 056

Expenditure on health care, tobacco and alcohol: evidence from household surveys in rural Puducherry

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Background: Healthcare expenditures exacerbate poverty, with about 39 million people falling into poverty every year because of such expenditures. Tobacco and alcohol consumption in addition to harmful health impact have economic consequences at household level.

Aims: To evaluate healthcare, alcohol, and tobacco expenditures among households in rural Puducherry and their impact on household expenditure patterns.

Methods: A community-based cross-sectional analytical study was conducted in selected villages within 5 km of a medical college hospital in Puducherry from September 2016 to June 2017. Socio demographic details and various household expenditures were obtained from 817 households with 3459 individuals. Data were analysed using STATA (v14).

Results: Higher mean percentage of health expenditure was found among households with low socioeconomic status [17.7, 95% CI: 14–21.3] and no health insurance schemes [13.4, 95% CI: 11.1–15.7)]. Households with low socioeconomic status [13.1, 95% CI: 7.5–18.7] had higher tobacco–alcohol expenditure. Increased health expenditure among households was positively correlated with having a loan (rs=0.48). Increased alcohol–tobacco expenditure among households was negatively correlated with food (rs = −0.52) and education (rs = −0.70) expenditure.

Conclusions & Recommendations: Healthcare and alcohol–tobacco expenditure individually contributed to one-tenth of the household budget. Spending on healthcare, alcohol, and tobacco created significant negative influence on investment in human capital development.

Key words: *Costs of tobacco and alcohol, Healthcare utilization, Household expenditures.*

OP 057

"Suwa Arana" health promotional camp: facilitating undergraduate medical education and service to a rural community

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Background: Understanding health promotion and its application is one of the main competencies to be achieved in the undergraduate medical curriculum of the Faculty of Medicine, University of Colombo.

Aims: To organize and carry out and assess a health promotional camp (Suwa Arana) which facilitates learning and provides services to the community, during a residential community attachment programme.

Methods: Undergraduate medical students during their residential community attachment programme in Embilipitiya MOH area visited the community and identified the health problems and the most relevant theme for health promotion. There were 13 groups and each group identified a different theme under the guidance of a tutor. The message, mode of delivery and the material to be used were selected. A school in the area was selected for the health promotion camp and preparation and delivery was through a participatory approach with school community and the regional health staff. Screening for non-communicable diseases, interactive public awareness stalls, medical services, skills development of school children were the main activities. Feedback was obtained from the students at the end.

Results: The students acquired knowledge and skill of developing and delivering a health promotional programme. Majority felt that they were able to develop communication, leadership, team building, and negotiating skills. The school children were trained on first aid and life skills, while the rural community benefitted by the awareness and services. An unanticipated outcome was the developing of a sense of oneness in the community as all sectors came together on this particular day. It was also noticed that this activity made the students appreciate the different sectors and different levels within the health services.

Conclusions & Recommendations: The student driven health promotional camps in a rural community enriches student learning and skill development while providing services to the community.

Key Words: *Community engagement, Medical Undergraduates, Community Stream*

OP 058

A cross-sectional study on multiple risk behaviours among students of a medical university in Puducherry

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Background: There is evidence to show health risk behaviours of the physician has a negative outcome on the patient well-being. Since medical students are the future physicians it is important to identify their risk behaviours and intervene.

Aims: To assess the multiple risk behaviours among the students of a medical university in Puducherry

Methods: A cross-sectional study was conducted among students from a medical university in Puducherry. Universal sampling method was used to recruit 892 students into the study. Information on their behaviours related to physical activity, nutrition, road safety, addictions and sexual practices were captured using modified pre-designed questionnaire based Youth Risk Behaviour Survey. Data analysis was done using SPSS 16.0.

Results: Among the respondents (n=892), majority i.e., 59% (n=526) were females. Nearly half i.e., 47% (n=419) students spent more than 3 hours daily in using mobile phones. Around 24% (n=214) consumed fast food more than 3 meals in a week and 16% (n=142) of them never consumed fruits in the past week. Nearly 13.7% (n=122) of the students have considered attempting suicide and 4.8% (n=44) have attempted suicide in the past one year. 26.1% (n=231) of them reported never wearing a helmet while driving a two-wheeler and 30% (n=267) of them reported never wearing a seat belt. Only 3% (n=27) reported either them or their partner using a condom during the sexual intercourse. 3% (n=27) of the students had addiction for smoking and alcohol.

Conclusions & Recommendations: There is a high prevalence of multiple risk behaviours affecting health among the medical students. Thus, it is important to plan for necessary interventions by creating more awareness among them about the high- risk behaviours.

Key words: *Medical students, Youth risk behaviours, Addictions, Road safety.*

OP 059

Level of health literacy and associated factors among environmental police officers in five divisions in Colombo district

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Background: Health Literacy is an evolutionary product of the health promotion concept and 'Adequate Health Literacy' is fundamental to health care, disease prevention and health promotion. Environmental police officers need to be adequately health literate to have a more active role in public health.

Aims: To describe the level of health literacy and factors associated with it among environmental police officers in five divisions in Colombo district.

Methods: The level of health literacy and its associated factors among 376 environmental police officers in five divisions in Colombo district were assessed by a descriptive cross-sectional study using a modified HLS-EU questionnaire. Health literacy was categorized into two levels as adequate and limited, based on a score of 47 questions. Associated factors were analyzed with the level of health literacy by the chi-square test and p-value of 0.05 was used to determine the significance.

Results: The level of health literacy among environmental police officers revealed that 52.9% (CI: 47.5%-57.4%) has adequate health literacy, meanwhile considerable proportion of the study population belongs to the limited health literacy (47.1%, CI: 42.6%-52.5%). Member of the health club or welfare group was significantly associated with the level of health literacy (p=0.02). There was a significant association (p=0.001) between limited health literacy and study participants who have not undergone an awareness program during the last six months (OR = 0.47, 95% CI: 0.3-0.7). Study participants who were not able to read and write in English was significantly (p=0.04) associated with limited health literacy (OR = 0.6, 95% CI: 0.3-0.99). There was a significant association (p=0.003) between study participants who had poor health knowledge (n=138, 52.1%) and limited health literacy when compared to the study participants who had good health knowledge (n=39, 35.1%).

Conclusions: Approximately half of the environmental police officers have limited health literacy in five divisions in Colombo district and factors associated with it can be considered for planned interventions by the relevant sectors in health.

Key words: *Environmental police officers, Health Literacy, Associated factors*

OP 060

Prevalence of tobacco use and characteristics of smokers among army soldiers in Security Forces Headquarters West

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Background: Tobacco use is one of the biggest and most challenging public health threats the world has ever known. It has a multitude of negative implications in fitness and combat readiness of military personnel. The Sri Lanka army is mandated in maintaining national security. Therefore, the optimal fitness and performance of army soldiers is of crucial importance.

Aims: To assess the prevalence of tobacco use and to describe the types of tobacco products used and the characteristics of smokers among army soldiers in Security Forces Headquarters (SFHQ)-West.

Methods: A cross-sectional study was conducted among 722 army soldiers in nine battalions at SFHQ-West using multistage sampling, conforming to ethical procedures. A self-administered questionnaire was developed using existing validated tools, pretested and used for data collection.

Results: Non-response and incomplete data sheets accounted for 3.2%. All 699 participated were males with a mean age of 29.2 (SD=6.4) years. Majority were privates, had studied up to G.C.E. O/L, were currently married and had a military service of 6-10 years. There were 45.1% current smokers (n=315, 95% CI: 41.8-48.9) and 30.2% were current daily smokers (n=211, 95% CI: 27.2-33.6). There were 46.1% never smokers (n=322, 95% CI: 42.5- 49.8) and 36.3% (n= 159) of the soldiers residing in the camps were exposed to second-hand smoking in their billets. Majority of smokers used manufactured cigarettes and current daily smokers used (a mean of) 4.1 manufactured cigarettes per day. Most of the current daily smokers started to smoke daily at a mean age of 18.8 years and 87.4% (n=270) of the current smokers have attempted to quit smoking. There were 9.5% (n= 50, 95% CI: 7.0-12.0) current daily smokeless tobacco users and 49.1% were never users (n=259, 95% CI: 44.8%-53.7%). The popular types of smokeless tobacco products used were betel, followed by babul, mawa, panparag and hans.

Conclusions & Recommendations: High prevalence rates of tobacco use and second-hand smoking can seriously affect the health of army soldiers as well as their military performance. This should be urgently rectified by means of implementation of evidence-based tobacco control interventions commencing from recruitment and basic military training.

Key words: *Tobacco use, Prevalence, Army soldiers*

OP 061

Evaluating the effectiveness of a psycho educational intervention to reduce the burden of caregivers of spinal cord injury patients

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Background: Spinal cord injury leaves individuals incapable of caring for themselves needing support of a caregiver for the rest of the life. The new responsibilities, care provision and difficulty in meeting ongoing demands may lead the untrained caregivers to become burdened. Presently the issues of these caregivers are hardly addressed and supportive interventions in Sri Lankan context is lacking.

Aims: To develop and evaluate the effectiveness of a psychoeducational intervention to reduce the caregiver burden.

Methods: The intervention was designed as a training programme to empower and develop necessary skills on physical caregiving and psychological support & to raise awareness on available health and social services including how to access them. The training programme was conducted at Teaching Hospital Karapitiya which was a known place to all the caregivers. A quasi experimental study was adopted to evaluate the effectiveness of the above developed intervention. Spinal cord injury patients were identified

from hospital registries at neurosurgical units from which 50 patients were randomly selected. The primary caregivers of these patients residing in Galle district were invited as a group intervention with a control group selected from Monaragala district who were exposed only to routine care. Caregiver burden was assessed with the modified caregiver strain index. The effectiveness of the intervention was assessed by comparing the reduction of median caregiver burden scores between the intervention and control groups before and after the intervention. Mann Whitney U test was applied to compare the burden scores of two groups before and after the intervention.

Results: In comparison to the control group, the caregiver burden scores of the intervention group (measured with Modified Caregiver Strain Index) before and after the intervention showed a highly significant reduction of the caregiver burden (pre intervention median burden score of intervention group 14.5 and post intervention median burden score 10.0, p<0.001). Median burden scores were significantly reduced after the intervention when compared to the control group (Median burden scores of intervention group and control groups were 10.0 and 14.5 respectively and significant at p=0.01)

Conclusions & recommendations: The above intervention was proven to be effective in reducing caregiver burden. Hence the intervention package is recommended to be incorporated into the existing rehabilitation process.

Key words: *Disaster, Individual capacity, Mass casualty incidents, Goals*

OP 062

Applying a human-Centred approach for the development of a novel digital platform to support the collection of health surveillance data for a large scale epidemiological study in South Asia

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Background: Despite significant advances in digital data collection platforms, mobile devices and connected medical devices, there remain significant challenges in the use of these technologies for large scale epidemiological studies in low-resource and rural settings. These include lack of 'fit-for-purpose' screening equipment, intermittent availability of electricity and internet and difficulties in training data collectors and operators. The use of Human-Centred Design principles, which focuses on technology design for the specific needs of individuals, has the potential for improved adoption and effectiveness in such settings.

Aims: To describe the development of a fit-for-purpose digital platform for addressing the challenges of collecting high-quality epidemiological data in a large-scale study across four countries in South Asia.

Methods: An iterative design and development process applying Human-Centred design principles, was used to build a data collection platform for a variety of rural and urban settings across six centres in Bangladesh, India, Pakistan and Sri Lanka. Design research exercises, to understand the users and contexts across the settings were first performed. This was followed by testing of software and hardware with actual users, and finally, development sprints to build the platform according to insights gained. This iterative loop was repeated several times until the complete platform was ready for field deployment. A pilot study of about 500 participants was conducted in Sri Lanka to test the deployment of the platform.

Results: Over several iterative loops of platform development, key challenges of in-field data collection were identified and overcome. These include the ability of the platform to operate without an internet connection and collect data remotely and for data from a variety of medical devices from different manufacturers to be automatically integrated into the electronic participant record. The platform allows for the speedy deployment of a study site, supports collection of a range of data points, including an extensive questionnaire, physical measurements and imaging. By synchronising to the cloud, it allows for rapid analysis of data to drive performance. Strong security and data governance policies are implemented. To date, high quality data have been collected from ~6000 participants in three countries.

Conclusions & Recommendations: Modern software and connected devices thoughtfully designed via Human-Centred Design principles and integrated into study workflows have the potential to support improved data collection and analysis in epidemiological studies.

Key words: *Digital platforms, Human-centred, Epidemiological studies, Data collection, Design*

OP 063

Assessment of activity limitation among diabetic patients using SALSA (Screening for activity limitation and safety awareness) scale in rural population of puducherry- A cross- sectional study

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Background: Diabetes is an emerging pandemic with estimated 415 million individuals suffering from this disease. Early diagnosis of diabetes and appropriate management are the mainstay of avoiding the untoward life-threatening complications in diabetic patients. Diabetic peripheral neuropathy (DPN) is one such complication which leads to physical disability. The newer tools like Screening for Activity Limitation and Safety Awareness (SALSA) scale captures activity limitations together with impairment and participation restriction measurements providing the complete picture of disability. There is a need for exploring the diabetes patient's perceived impact of the diabetes on the daily activities and productive life of the diseased.

Aims: To determine the level of activity limitation and number needed to screen using validated Screening for Activity Limitation and Safety Awareness (SALSA) scale among the diabetic patients treated at non-communicable disease (NCD) clinics of rural Primary Health Centres (PHC) of Puducherry, South India

Methods: A Cross-sectional study was conducted among the patients who had attended NCD clinics at the 2 selected PHCs of Puducherry during May–September 2017. After the informed written consent, the diabetes patients were assessed using validated SALSA scale. Information on sociodemographic characteristics and behavioural risk factors was collected by interviewing the study participant.

Results: Among the total 303 patients, the mean age of the participants was 49.1yrs ± 10.5 yrs, nearly half of the population was female (51.5%, n=156), majority of the participants had only primary level of education (41.9%, n=127). A total of 24.4% individuals (n=74) presented with mild limitation and 2.6% people (n=8) presented with moderate limitation of activity. Of the total 303 patients 82 patients were identified with activity limitation using SALSA, thus the number of diabetic patients who needed to be screened for finding one with activity limitation was 4 (303/82). Among those who had activity limitation nearly half of them 48.8% (n=40) had no formal education and their association was found to be statistically significant (p<0.001). There was a statistically significant correlation between activity limitation and age (r = 0.65; p<0.0001) and duration of diabetes (r = 0.44; p<0.0001).

Conclusions & Recommendations: Functional limitation due to diabetes had an impact on the conduct of activities and social participation. The association between Screening of Activity Limitation and Safety Awareness and participation scales will assist in designing evidence-based assistance measures.

Key words: *Diabetics, Activity limitation, Screening*

OP 064

Physical activity patterns and perceived barriers for physical activity among school teachers in Kattankudy educational division

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Background: It is a well-established fact that prevalence of physical inactivity is rising in at global level in all stages of life with significant association for increased non-communicable disease burden.

Aims: To describe the physical activity (PA) patterns, its perceived barriers for physical activity among school teachers in Kattankudy Educational Division (KED).

Methods: A descriptive cross-sectional study was conducted among 392 government school teachers selected from 16 schools by multistage cluster sampling method. Socio-demographic factors, physical activity pattern and perceived barriers were assessed by using a validated "International Physical Activity Questionnaire (IPAQ)-Long Version". The metabolic equivalent task (MET) in minutes per week was calculated to determine total PA and

it was categorized in to sufficient and insufficient groups. Chi-square and Mann- Whitney U test were performed at a 5% level of significance.

Results: Response rate was 95.8% (n=392). The mean age of the sample was 36.9 years (± SD 8.9). Among the participants, 81% (n=316) were female, 62% (n=243) were less than 40 years, 80% (n=314) were Muslim, 85% (n=335) were married, 51% (n=201) is having at least two children. In the study group, 76% (n=296) were residing in an urban area and 68% (n=267) reported sitting for more than 2 hours per day. Each participant on average spent 3005.7 (SD±2706.7) MET-minutes total energy per week. Main energy expenditure was engaging in home cleaning and gardening [1516.9 (SD±1618.9) MET-minutes per week]. More energy was spent in moderate activity [2069.0 (SD±2173.7) MET-minutes per week] percentage of low, moderate and high PA level was 15% (n=61), 48% (n= 188) and 37% (n= 143) respectively. Majority (85%, n=331) of the participants had sufficient level of PA. lack of time, need time to relax and having a child were perceived barriers for engaging in PA. Insufficient PA level was significantly associated among young (less than 40 years) and not having chronic disease (p<0.05). Perceived barriers were not significant with sufficient level of PA (p>0.05).

Conclusions & Recommendations: Majority of school teachers in KED had sufficient level of PA. Lack of time, need time to relax and having a child were perceived barriers for engaging in PA. Young teachers (less than 40 years) and those who were not having chronic disease did not meet the sufficient level of PA. A separate intervention program has to be initiated to increase awareness on participating PA to young teachers.

Key words: *Physical activity, Perceived barriers, School teachers*

OP 065

Planning a behaviour change intervention on dengue prevention in highly epidemic area in Kurunegala district

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Background: Measures have to be taken to minimize the societal burden due to dengue through sustainable vector control by behaviour change interventions and risk modification. Communication for Behaviour Impact (COMBI) is a methodological process which blends strategically a variety of communication interventions intended to engage individuals and families in adopting healthy behaviours and maintaining those behaviours. The COMBI planning is based on the practical way of adopting the recommended behaviours which are linked with effective communication.

Aims: To develop a COMBI plan to change the behaviour of the householders to prevent dengue in highly epidemic Medical Officers of Health (MOH) area in Kurunegala district.

Methods: The plan was developed according to World Health Organization (WHO) COMBI planning 10 steps

with the scientific evidence and expert opinion. The Situational Market Analysis for Communication Keys (SMACK) was conducted using mixed methodology during January to March 2019 among the householders aged 18 to 70 years. The methodology consisted of two parts. A descriptive cross sectional study to evaluate their level of knowledge, attitudes, current behaviours and the perception on community capacity was conducted among randomly selected householders in the area. Eighteen Focus Group Discussions (FGD) were conducted to assess the preferred mode of communication and factors affecting dengue prevention behaviour among the householders until a theoretical saturation point achieved. Content analysis was done among the deductively driven data. After finalizing Specific Behaviour Objectives (SBOs), the plan was developed to implement among the householders in the particular setting.

Results: The overall goal of the plan is to contribute to the reduction in morbidity and mortality from dengue disease in the selected area by improving the dengue prevention behaviours. The identified SBOs for the plan are to improve the proper waste management practices according to "Three R concept" (Reduce, Reuse and Re-cycling) and to promote the early notification of suspected dengue cases. Advocacy programs were conducted among the stakeholders to gain the support. The main strategies were to conduct community empowerment program to improve the proper waste management to prevent vector growth, promote composting for degradable waste and improve early notification by conducting health promotion sessions among 150 householders (25 per cluster). Household inspection, displaying stickers with vector control messages for reinforcement and distribution of hand bills on dengue preventions were identified as activities for personal selling. The behavioural impact will be assessed by the household level observations after the implementation of the activity plan.

Conclusions & Recommendations: Developing a COMBI plan for an area after identification of SBOs would be feasible to implement in order to empower the community to prevent dengue in the area. A parallel group interventional study will be conducted to assess the effectiveness of the COMBI plan in the area.

Key words: *Dengue, Communication for Behaviour Impact, Specific Behaviour Objectives, Situational Market Analysis for Communication Keys, Waste management*

OP 066

Stages and associated factors of retinopathy and cataract among diabetic patients referred to the eye clinic at Teaching Hospital, Kandy

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Background: Non-communicable diseases (NCDs) are one of the main health and development challenges of the 21ˢᵗ century which account for 70% of disease burden in Sri Lanka. Diabetes mellitus is a common NCD with multi system complications. Diabetic Retinopathy (DR) and Cataract are main diabetic related ocular complications.

Aims: To describe stages and associated factors of retinopathy and cataract among diabetic patients referred to the eye clinic at Teaching Hospital (TH), Kandy.

Methods: A descriptive cross-sectional study was done among 381 diabetic patients over 18 years of age at the Eye Clinic TH Kandy. An interviewer administered questionnaire and data extraction sheet were used to collect data. Univariate analysis and for selected variables a bivariate analysis were conducted. Chi square test for categorical variables and the t test for numerical variables were used. "p" value of 0.05 was used to identify statistical significance.

Results: DR was identified among 31.7% (n=381). In the study sample 13.7% (n=381) had mild Non-Proliferative Diabetic Retinopathy (NPDR), 7.3% (n=381) had moderate NPDR, 1.3% (n=381) had severe NPDR, 6% (n=381) had Proliferative Diabetic Retinopathy and 3.6% (n=381) had pure macular edema. The mean time duration to get appointment in the eye clinic was 74.8 days (SD 32.4days). Proportion of cataract in current study was 29.9% (n=381). Statistically significant associations were found between gender and cataract (OR=2.3, 95% CI: 1.3-4.1, p=0.003), DR and duration of DM (OR=0.4, CI: 0.2-0.7, p =0.002) and DR and presence of hypertension (OR=1.8, 95% CI: 1.02-3.1, p=0.04). Statistically significant higher mean age was observed in DR only group (t=2.8, df=265, p=0.005) and cataract only group (t=6.7, df=258, p<0.001).

Conclusions & Recommendations: Nearly one-third of diabetic patients had retinopathy with higher proportions of early stages. Also, cataract was diagnosed among one-third of the study sample. Adequate treatment for hypertension in patients with DR and frequent screening in elderly population and males with DM for cataract are recommended. Improved epidemiological studies on DR and cataract are still required to find out reasons for delay in presentation.

Key words: *Diabetic retinopathy, Cataract among diabetes*

OP 067

Incidence and risk factors of hypertension and diabetes among disease free Healthy Lifestyle Centre clients after two years from baseline assessment

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Background: In the current epidemiological transition, Sri Lanka is facing a heavy disease burden due to non-communicable diseases (NCD). Healthy Lifestyle Center (HLC) is a national screening programme for NCD, implemented in primary care institutions. However, the current follow up process at HLCs is not optimal and may lead to delay in detecting disease onset and change in risk levels.

Aims: To determine the incidence and risk factors of hypertension and diabetes among HLC clients who were disease free at baseline screening two years ago at selected clinics in Medical Officer of Health area Meerigama

Methods: A community based follow up study was conducted in three selected HLCs among a random sample of 436 clients who were disease free at baseline screening 2-3 years ago. Socio demographic characteristics were obtained using an interviewer administered questionnaire. Blood pressure, fasting capillary blood glucose measurement and anthropometric measurements were obtained by trained individuals using calibrated instruments following the protocols followed in HLCs. Socio-demographic characteristics and risk factor levels were described using descriptive statistics. Diseases and risk factor prevalence were calculated and chi square test was used to determine the associations.

Results: Out of the total sample only 17% (n=74) were males. The mean age was 52.14 (SD= 9.1) years with a range of 37 to 75 years. At baseline, prevalence of risk factors were: overweight (29.4%), obesity (7.6%), pre-diabetes (27.1%) and pre-hypertension (41.1%). At the follow-up visit 7.3% (n=32) had diabetes while 35.8% (n=156) had hypertension. Prevalence of risk factors were: overweight (30.7%), obesity (8.5%), pre-diabetes (15.1%) and pre hypertension (32.6%). Of the sample, 19.7% (n=86) were diagnosed with at least one NCD elsewhere between the two visits. Incident diabetes mellitus was associated with pre-diabetes (p<0.001) and obesity (p=0.001) while incident hypertension showed significant association (p=0.001) with systolic pre-hypertension.

Conclusions & Recommendations: Many HLC clients with risk factors have developed hypertension and diabetes at reassessment after two years. Follow-up visits should be more frequent and structured to prevent disease, addressing risk factors through comprehensive lifestyle modification initiatives delivered at community level**.**

Key words: *Hypertension, Diabetes, Risk factors, Prevalence, Healthy Lifestyle centers*

OP 068

Risk factors for poor control of bronchial asthma among five to ten years old children attending Lady Ridgeway Hospital for children of Sri Lanka

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Background: Childhood bronchial asthma is a global health problem. It is associated with suboptimal control for which knowing the risk factors would be worthwhile.

Aims: To determine the risk factors for poor control of bronchial asthma among five to ten years children attending Lady Ridgeway Hospital for Children of Sri Lanka.

Methods: Case control study was carried out among 75 cases, who had poor control of bronchial asthma and 150 controls, who had good control of bronchial asthma. Cases and controls were divided using validated asthma therapy assessment questionnaire. Systematic sampling was done and interviewer administered questionnaire was used. To evaluate risk and statistical significance odds ratio and chi square were used.

Results: This study identified that being a female child (OR=2.66; 95% CI: 1.5-4.71), age between 5 to 7 years (OR=2.34; 95% C1: 1.31-4.18), exposed to passive smoking (OR =3.11; 95% CI: 1.39-6.99), exposed to pets (OR=2.65; 95% CI: 1.12-6.24), sleep disturbance associated with wheezing (OR =16.9; 95% CI: 6.62-43.16), inadequate cleaning of dust in furniture (OR = 4.82 95% CI: 2.51-9.24), having bronchial asthma for less than one year duration (OR=1.96; 95% CI: 1.12-3.45) and incorrect inhaler technique (OR=5.4; 95% CI: 1.9-14.8) were significant risk factors for the development of poor control in bronchial asthma. Inadequate changing pillow cases (OR=0.53; 95% CI: 0.3-0.94) and bedsheets (OR=0.9; 95% CI: 0.22-0.71) were found to be significant protective factors.

Conclusions & Recommendations: It is recommended to educate the parents/caregivers regarding the inhaler technique in each clinic visit. Future studies are needed to be focused on community setting to assess the risk factors for the level of control of bronchial asthma.

Key words: *Childhood bronchial asthma, Control, Risk factors*

OP 069

Socio-economic inequalities of non-communicable disease risk factors in India: a national analysis

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Background: Non-communicable diseases (NCD) are responsible for high morbidity and mortality in India. Existing socio-economic inequalities for NCDs suggests the potential existence of inequalities for NCD risk factors among Indians.

Aims: To assess socio-economic inequalities of six NCD risk factors among Indians.

Methods: Responses to 2015/2016 Indian National Family Health Survey were analysed. From 601,509 households, 699,686 females and 112,122 males were interviewed (97% and 92% response rates respectively). Using logistic regression, inequalities for tobacco smoking, use of smokeless tobacco, alcohol consumption, hypertension, hyperglycaemia and overweight/obesity were assessed across socio-economic variables.

Results: Women and men with no education smoked (OR=4.8; 95% CI: 3.8-6.1 and OR=2.4; 95% CI: 2.2-2.7 respectively); used smokeless tobacco (OR=5.2; 95% CI: 4.6-5.8 and OR=2.0; 95% CI: 1.9-2.2 respectively) and alcohol (OR=1.7; 95% CI: 1.4-2.0 and OR=1.8; 95% CI: 1.6-1.9 respectively); while women were hypertensive (OR=1.4; 95% CI: 1.3-1.4) compared to those with higher education. Christian women were hypertensive (OR=1.2; 95% CI: 1.1-1.2); hyperglycaemic (OR=1.3; 95% CI: 1.1-1.5); used smokeless tobacco (OR=1.8; 95% CI: 1.7-1.9) and men smoked (OR=1.3; 95% CI: 1.1-1.5) compared to Hindus. Both Christian women and men were overweight/obese (OR=1.4; 95% CI: 1.3-1.5 and OR=1.4; 95% CI: 1.3-1.6 respectively) and consumed alcohol (OR=2.3; 95% CI: 2.0-2.6 and OR=1.6; 95% CI: 1.4-1.8 respectively) compared to Hindus. Women of schedule tribe smoked (OR=2.8; 95% CI: 2.5-3.1); men were hypertensive (OR=1.3; 95% CI: 1.2-1.4) and both women and men used smokeless tobacco (OR=2.1; 95% CI: 2.0-2.2 and OR=1.2; 95% CI: 1.2-1.3 respectively) and alcohol (OR=6.0, 45; 95% CI: 5.7-7.2 and OR=2.0; 95 % CI: 1.9-2.2 respectively) compared to those of forward class. Compared to those in highest wealth quintile, women and men of the lowest wealth quintile smoked (OR=3.3; 95% CI: 2.8-3.8 and OR=1.4; 95% CI: 1.3-1.6 respectively); used smokeless tobacco (OR=5.6; 95% CI: 5.2-6.2 and OR=4.0; 95% CI: 3.7-4.4 respectively) and alcohol (OR=2.0; 95% CI: 1.7-2.3 and OR=1.3; 95% CI: 1.2-1.4 respectively). Both non-manual and manual worker men smoked (OR=1.3; 95% CI: 1.2-1.5 and OR=1.5; 95% CI: 1.4-1.6 respectively), used smokeless tobacco (OR=1.5; 95% CI: 1.4-1.6 and OR=1.9; 95% CI: 1.8-2.0 respectively) and alcohol (OR=1.6; 95% CI: 1.4-1.7 and OR=1.6; 95% CI: 1.5-1.8 respectively); while non-manual worker men were hypertensive (OR=1.2; 95% CI: 1.1-1.4) and overweight/obese (OR=1.4; 95% CI: 1.2-1.5) compared to men who did not work.

Conclusions & Recommendations: Behavioural risk factors of NCDs were more common among the poor, low educated, Christian women and men of Schedule tribe and working men. These inequalities must be addressed by policy planners to combat NCDs in India.

Key words: *NCD, Inequalities, Risk factors, India*

OP 070

Prevalence of metabolic syndrome in patients with major psychiatric illness in a tertiary care hospital in Colombo, Sri Lanka

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Background: Metabolic syndrome is an important cause of cardiovascular morbidity and mortality. However, metabolic syndrome in Sri Lankan psychiatric patients has not been studied yet.

Aims: To evaluate the prevalence of metabolic syndrome in psychiatric patients and to identify high risk categories.

Methods: This was a cross sectional study done in two psychiatric clinics. The study population included all patients with schizophrenia, bipolar affective disorder and depression. The calculated sample size was 400 patients. Metabolic syndrome was diagnosed according to the American College of Cardiology/ American Heart Association/ National Heart, Lung and Blood Institute guidelines. An interviewer administered questionnaire was used to collect socio demographic data and medical history. The parameters measured were body mass index, waist circumference, blood pressure, blood sugar and lipid profile. Data analysis was done by using percentages with 95% confidence intervals.

Results: The total number of participants was 298 (74.5%). The overall prevalence of metabolic syndrome in psychiatric patients was 33.3% (95% CI:60.7-72.6%). The prevalence of metabolic syndrome was higher in females [37.9%,95% CI:27.8-42%] than males [30.1%,95% CI: 20.5-39.8%]. The percentage was highest in schizophrenia [39.3%,95% CI: 31-47.6] and second highest in depression 30.7% (95% CI: 21.3-40%). The percentage was low in smokers [22.7%,95% CI: 11.3-34.4%] and alcohol consumers [34%,95% CI: 13.9-44.4%].

Conclusions & Recommendations: The presence of metabolic syndrome is high in the study population especially in females. The results provide evidence to support the need for intervention studies and implement policies to carry out regular metabolic screening in psychiatric patients.

Key words: *Metabolic syndrome, Psychiatric illness, Prevalence*

OP 072

Development of an m-Health, Nutrition and Lifestyle (m-HENAL) application for cardiovascular disease risk reduction in a middle-aged Sri Lankan population

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Background: Cardiovascular disease (CVD) is the leading cause of mortality worldwide. m-Health (use of mobile technologies for health care) could be a potential strategy for promoting healthy diets and physical activity and thereby reducing the risk of CVD in Sri Lanka.

Aims: To develop and pilot test a mobile phone based application on nutrition counselling and lifestyle modification for adults aged 35-64 years in the community

Methods: The process followed 3 stages: (i) Development of content (ii) Development of mobile application (iii) Pilot testing. In the first stage, content was compiled following a review of scientific literature and national guidelines on nutrition and physical activity. Messages were developed conforming to the concepts of behavior change theory and finalized by a group of experts. In the second stage, technical specifications for application were defined in liaison with a software developer and a mobile network. A mobile application and a web application were developed and installed into a mobile network. A total of 30 participants aged 35-64 years with a BMI $\geq$ 25 kgm^{-2} were enrolled for one month in Pitakotte Medical Officer of Health area.

Results: A total of 72 messages were developed under the key themes (eating behaviour, calorie reduction, fat and salt restriction, intake of fruits and vegetables, promoting physical activity, reducing smoking/alcohol intake). Messages were simple, culturally acceptable, available in Sinhala and Tamil languages and both in voice and text form. Application was interactive and customized to the needs of user (language, preferred time, certain behaviours). Mobile application was user-friendly to register participants using a smartphone and web application was well-designed for system administration, message delivery and report generation. In the pilot test, automated 2 text and 2 voice messages were sent per week on fixed days of week. Message receipt by participants was successful except for a few technical issues.

Conclusions & Recommendations: The m-Health application was developed successfully to register participants, send automated voice and text messages as per schedule and capture user dynamics. The technical issues were rectified. Pilot study verified receipt of messages by the participants as per schedule.

Key words: *m-Health, Nutrition intervention, Lifestyle modification, Cardiovascular disease*

OP 073

Perceived self-efficacy and its associations in self-managing chronic diseases among elderly patients in a clinic setting

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Background: Non-communicable diseases and elderly population are on the rise worldwide. Self-efficacy is posited as fundamental to achieve behavior change to fill the present gaps in risk factor control.

Aims: To assess the perceived self-efficacy and its associations in self-managing chronic diseases among elderly patients in a clinic setting.

Methods: A hospital-based cross-sectional analytical study was conducted to assess the perceived self-efficacy and its associations in self-managing chronic diseases among elderly patients attending medical clinic at BH Mulleriyawa. By systematic sampling method, 461 eligible patients diagnosed with one or more five diseases were selected. Blood sugar & cholesterol were taken by medical records. Interviewer-administered Chronic Disease Self-Efficacy Questionnaire validated in West was used to collect data. Mean perceived self-efficacy score was calculated by adding scores of all domains. By multivariate analysis, odds ratios with 95% CI were calculated to find associations with control of risk factors.

Results: Response rate was 92% (n=424). Mean age was 69.49(SD±6.08) years. The sample consisted of 75.7% (n=321) females and 95% (n=402) were educated. 70.6% (n=298) were living with & 46.3% (n=193) were economically dependent on children. The study population had a mean perceived self-efficacy score of 3.64 (SD±0.538) out of 5 (Good>3.64>Poor). Majority (82.5%, n=350) had multiple (>1) morbidities. Respondents with single disease had good perceived self-efficacy compared to those with multiple co-morbidities. The existence of multiple co-morbidities among elderly was significantly (p=0.01) associated with poor mean perceived self-efficacy (AOR=2.024, 95% CI:1.175-3.487). In disease control status, significant association was found between good mean perceived self-efficacy and blood pressure control (<140/90 mmHg), (AOR=0.469,95% CI:0.245-0.899) but not with blood sugar control (<110 mg/dL) or with total cholesterol level (< 240 mg/dL).

Conclusions & Recommendations: Elderly patient's overall perceived self-efficacy level was high. Targeted interventions to improve self-efficacy may have a beneficial effect on disease control factors such as blood pressure. Further research studies are needed to longitudinally assess the temporality of perceived self-efficacy and its determinants.

Key words: *Self-efficacy, Chronic diseases, Elderly*

OP 075

Social and environmental correlates of obesity in urban Colombo

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Background: Obesity is an independent risk factor for developing coronary heart disease and a predisposing factor for hypertension, diabetes mellitus and dyslipidemia. Potential determinants of obesity are ethnicity, education, income, diet and physical activity. Prevalence and the correlates of obesity are not known in Colombo Municipal Council (CMC) which consists of Sinhalese (53%), Tamils (15.4%) and Moors (30.5%).

Aims: To estimate the prevalence, describe the social and environmental correlates and to characterise the geospatial distribution of obesity with GIS mapping among adults in the Colombo Municipal Council (CMC).

Methods: A community based cross sectional analytical study was carried out in 2015 in the CMC among 1350 participants aged 35-64 selected by multi-stage cluster sampling from 45 clusters with 30 adults in each. Demographic, socio-economic, lifestyle data were collected by trained data collectors using the Centre for cArdiometabolic Risk Reduction in South-Asia (CARRS) questionnaire validated for Sri Lanka. Anthropometry was done adhering to standard procedure and was classified as per WHO Obesity Task Force Classification for Asians. Central obesity was classified as per International Diabetes Federation classification. Statistical analysis was done by SPSS version 21. BMI values were risk weighted

and categorized according to the natural distribution of processed data yielding four risk weighted categories for obesity. The GIS analysis was done with ArcGIS software to identify geospatial clusters for risk weighted obesity.

Results: The prevalence of obesity (BMI≥25.0) was 58.9% (95% CI: 56.1-61.6) and it was significantly associated with Moor ethnicity (AOR= 1.95, 95% CI: 1.34-2.82) and inadequate physical activity (AOR=1.40, 95% CI: 1.08-2.06). Tamil ethnicity (AOR=0.65, 95% CI: 0.46-0.98), male sex (AOR=0.50, 95% CI: 0.33-0.73), belonging to the older age category of 55-64 years (AOR=0.65, 95% CI: 0.44-0.96), income ≤20,000 SLR (AOR=0.65, 95% CI: 0.44-0.92) and current alcohol use (AOR=0.50, 95% CI: 0.35-0.73) were protective for being diagnosed as obese. Central obesity was seen in 64.7% (n=472) females and 57.6% (n=350) males. The GIS mapping identified 5 high risk clusters for obesity in the CMC.

Conclusions and Recommendations: Prevalence of adult obesity in the CMC is high. Strong obesity surveillance programmes addressing the social, environmental and life style correlates are needed. Geographical Information Systems can be useful in mapping and policy decision making related to obesity in urban settings.

Key words: *Obesity, Social, Environmental, Correlates*

OP 76

Predicting risk of diabetes in South Asian populations

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Background: South Asians are at high risk of type-2 diabetes (T2D). There is an urgent need to develop and validate tools for the identification of South Asians who are at risk of T2D, to enable implementation of lifestyle and pharmacological interventions.

Aims: To determine predictors of incident diabetes among South Asians living in London, UK.

Methods: We recruited 17,701 South Asian men and women aged 35-75 years and living in London, UK to the LOLIPOP prospective population study (2002-8). All participants underwent a comprehensive baseline evaluation, including questionnaire, physical measurements (anthropometry and blood pressure) and collection of fasting blood samples. All participants were followed to December 2017 for incident T2D, through electronic medical records and clinical re-evaluation. Baseline blood samples were analysed for fasting glucose, insulin and lipid profile, HbA1c and C-reactive protein. In addition, metabolite profiling including fatty acids, and amino acid markers of intermediary metabolism were measured by Nuclear Magnetic Resonance. T2D was defined as physician diagnosis of T2D, fasting glucose ≥7.0mmol/L or HbA1c≥6.5%.

Results: There were 1,490 cases of incident T2D. Compared to controls, people with incident T2D were older, more likely to be male, had higher body mass index, waist circumference and blood pressure, higher levels of fasting glucose, insulin, HbA1c, triglycerides and numerous metabolites including branch-chain and aromatic amino acids, but lower levels of

HDL cholesterol and unsaturated fatty acids. In univariate analysis, the strongest non-laboratory predictor of incident T2D was waist circumference (RR=1.58 per 1SD change in waist [p=10^{-67}], compared to 1.44 for body mass index [p=10^{-50}]). Univariate analysis of biochemical predictors revealed the strongest predictors for incident diabetes to be fasting glucose and HbA1c (RR=2.15 [p=10^{-187}] and 1.75 [p=10^{-94}] per 1SD change respectively), with both measures outperforming more complex indicators of metabolic health including insulin, fatty acid profiles and amino acid concentrations (all RR<1.50 per 1SD change).

Conclusions & Recommendations: Waist circumference, fasting glucose and HbA1c are the strongest predictors of incident T2D in South Asians. Our well-powered longitudinal population study, with large numbers of incident T2D cases will now enable development of the first valid, comprehensive models for prediction of T2D in South Asian populations, based on non-laboratory and/or laboratory measures.

Key words: *Diabetes, South Asian populations*

OP 077

Surveillance of Cardiovascular Disease, Type-2 Diabetes and their risk factors in South Asia

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Background: Accurate knowledge of burden and future trajectories of cardiovascular disease (CVD), Type 2 diabetes (T2D) and their risk factors is central to the formulation of health policy and delivery of effective healthcare interventions for prevention and control. However, the current systems for periodic collection of data on non-communicable diseases (NCD) are fragmented and incomplete in South Asia. The aim of the study is to carry out surveillance for CVD and T2D in 4 South-Asian countries.

Aims: To describe the preliminary findings of the Global Health Research Unit surveillance study which aims to strengthen NCD surveillance systems in Bangladesh, India, Pakistan and Sri Lanka.

Methods: We established a network of community-based, surveillance sites in Bangladesh, India North, India South, Pakistan and Sri Lanka, centred on primary healthcare units distributed in representative rural and urban settings. We started a comprehensive screening programme that includes behavioral risk factors, anthropometry, biological sampling, monitoring of physical activity and point of care laboratory and diagnostic tests such as total cholesterol, blood glucose, ECG, retinal imaging, and spirometry using a shared methodology and standardized operating procedures. By the end of the project, we plan to obtain data and samples from ~150,000 adult (≥ 18 years old) permanent residents from the four countries.

Results: We already recruited 5437 participants from Bangladesh, India and Sri Lanka. The mean age of participants [Males= 2102 (38.7%)] was 46.7 (SD=15.3) years. The mean BMI was 24.6 (SD=7.0) kg/m^2 and the mean waist circumference was 83.7 (SD=11.9) cm. The average body fat percentage was 31.5 (SD=11.4) % while the average visceral fat percentage was 7.5 (SD=3.9) %. The difference in BMI, waist circumference, body fat and visceral fat percentages across the three countries was statistically significant (One-Way Anova; p<0.001). The mean fasting glucose was 100.2 (SD=32.7) mg/dl and the mean fasting total cholesterol was 151.7 (SD=34.4) mg/dl. While the difference in fasting glucose between the three countries was statistically significant, the fasting total cholesterol level was significantly lower only in Bangladesh and there was no difference between Sri Lanka and India.

Conclusions & Recommendations: Our findings will strengthen NCD surveillance systems in these countries and facilitate transformation of health systems in South Asia through data-driven actions to improve efficiency, effectiveness and quality of healthcare.

Keywords: *Cardiovascular disease, Type 2 diabetes, South Asia, Surveillance, Risk factors*

OP 078

Prevalence of alcohol use and its effects on Quality of Life (QoL) among adult men in coastal south India.

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Background: A national survey in India on drug abuse showed that the prevalence of alcohol consumption was 29.2% among men and 1.2% among women. Quality of Life (QoL) is an important parameter among alcohol users which explains to what extent physical, psychological, social and environmental domains of life are accomplished. There is a paucity of information on the QoL among alcohol users.

Aims: To assess the prevalence of alcohol use among adults and its effect on the quality of life in the rural and urban areas of Puducherry, India.

Methods: A community-based cross-sectional analytical study was conducted among adult men in Puducherry, South India. Participants were included from selected rural and urban areas. Alcohol Use Disorder Identification Test (AUDIT) and WHO QoL BREF questionnaire were used to identify the dependence. An independent t-test was used to compare the QoL scores among alcohol users and non-users. Multivariate linear regression analysis was used to assess the independent association of alcohol use with QoL.

Results: A total of 316 men participated. Prevalence of alcohol use was 38% (n=120, 95% CI: 32.8 - 43.4). Mean (SD) age at initiation was 25.1 (8.8) years. The prevalence of probable dependence was 7.9% (n=25) and harmful use was higher (27.8%, n=89). Overall mean (SD) score of QoL was less among alcohol users [50.7(10.9)] compared to non-alcohol users [63.5(10.1)] (p <0.001). Differences were also observed across all domains of QoL. Among

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alcohol users, QoL score was significantly different across alcohol dependency level. Multilinear regression analysis revealed that AUDIT score and educational status were independently related with QoL score.

Conclusions & Recommendations: Prevalence of alcohol use was high in this population and it significantly reduced their QoL. There is a clear need for public health awareness programs to reduce alcohol use and improve QoL of alcohol users.

Key words: A*lcohol, Quality of life, Addictions, AUDIT score,*

OP 111

Effectiveness of an intervention to improve physical activity among government schoolteachers in the Southern province, Sri Lanka: A cluster randomized trial

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Background: Physical inactivity is a common modifiable risk factor for cardiovascular diseases, diabetes and malignancies. Physical activity improves overall health, quality of life and productivity at work. As these diseases are increasing among adult population, evidence-based interventions targeting worksites, to improve physical activity, is a public health priority.

Aims: To assess the effectiveness of a workplace-based intervention designed to increase physical activity levels and to reduce cardiometabolic risk factors among government schoolteachers in the Southern province.

Methods: A total of 168 teachers from 24 clusters (government schools in the Southern province), each containing seven teachers were recruited to a cluster randomized controlled trial. Schools were randomly allocated to intervention (IG) and control (CG) groups each having 12 clusters. Physical activity level, knowledge and attitudes, BMI, waist circumference, blood pressure and blood sugar levels were measured at the baseline and six months after intervention using two questionnaires and health checks in both groups. Intervention comprised five components; awareness, group discussion with target setting, physical activity calendar, exercise sessions, poster and health messages targeting teachers to change behaviour. Intervention was delivered only to the IG and CG was not given any of the components.

Results: Majority of both groups were females, 75% in intervention group and 76.2% in control group. There was no significant difference observed in baseline characteristics age, sex, educational, income, knowledge and attitudes, physical activity levels or biophysical parameters between IG and CG. Significant increases of knowledge on physical activity ($p<0.001$), favourable attitudes ($p=0.02$) and self-reported levels of physical activity ($p=0.003$) were observed after intervention in IG. Proportion of physically active participants in the intervention group increased from 56% (pre intervention) to 77.4% at post intervention. In addition,

reduction in proportions of overweight ($p=0.04$), central obesity in females ($p=0.02$), diastolic BP ($p=0.01$) and raised blood sugar ($p<0.001$) were also found in IG. No significant changes were detected in any of the variables in CG after six months.

Conclusions & Recommendations: Low cost school based multicomponent intervention was effective in changing physical activity levels of participants and reducing cardio metabolic risk factors. These are recommended as an essential strategy in chronic disease prevention campaigns among teachers.

Key words: *Intervention, Cluster randomized trial, Teachers, Physical inactivity, Die*t

Oral Presentations

Day 1: 19th September 2019, 11:00 am - 1:00 pm, Cedar Room

FREE PAPER SESSION 8: COMMUNICABLE DISEASES

Chairpersons : Prof. Suneth Agampodi   Dr. Thushani Dabrera

OP 079

Disease related malnutrition in Patients with Pulmonary Tuberculosis (TB), attending district chest clinics (DCC) of Colombo and Gampaha districts

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Background: Tuberculosis (TB) is one of the most prevalent communicable diseases in Sri Lanka. Even though the association between malnutrition and TB is well recognized, available data on the Sri Lankan situation of the above relationship is inadequate.

Aims: To identify the prevalence of disease related malnutrition among pulmonary TB patients in Sri Lanka.

Methods: A descriptive cross sectional Study was carried out including 257 pulmonary TB patients attending Chest Clinics in Colombo and Gampaha. An interviewer administered questionnaire, 24 hour dietary recall, physical examination, anthropometry and body composition analysis were done.

Results: There were 72.8% (n=187) males and 27.2% (n=70) females. 56.4% (n=145) of patients had BMI<18.5kg/m^2, of them 72.4% (n=105) were males and 27.6% (n=40) were females. 23.7% (n=61) were severely thin. Mean BMI from 18.6± 3.9kg/m^2 at initiation of treatment showed improvement with treatment to 18.8± 4.9kg/m^2, however, the difference was not statistically significant. Half of patients (n=123, 47.8%) experienced impairment of functional capacity. One third (33%, n=85) and 29.1% (n=75) of patients were identified as having fat and muscle loss respectively. Gender, level of education, smoking and alcoholism were significantly associated with the presence of malnutrition, whereas age, occupation, monthly income were not associated.

Conclusions & Recommendations: Two third of pulmonary TB patients had malnutrition and one fourth of them were severely malnourished. There was no significant improvement of nutritional status with anti TB treatment. There is a need of addressing malnutrition in TB patients.

Key words: *Tuberculosis, Malnutrition, Socio-economic factors, Body composition.*

OP 080

Active fever surveillance among school children for proactive dengue prevention and control in Sri Lankan education sector

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Background: Dengue has become the main vector borne disease over the last two decades in Sri Lanka. Each year, around 30% of cases consist of school going children. There is a high risk of exposure of school children during the peak biting time of the vector. Children carry the main burden of morbidity for dengue with complications including Dengue Hemorrhagic Fever and Dengue Shock Syndrome. School inspection programs during 2017 and 2018 have revealed that schools were ranked as leading sites for vector breeding with premise indices 7.58% and 11.6% respectively. This demanded targeted action towards schools, coupled with specified disease surveillance and rapid response for schools and surrounding premises. The risk of children acting as virus reservoirs and transmitters to the community also pose a great threat.

Aims: To initiate and establish a syndrome surveillance system for school children coupled with immediate response.

Methods: A trilingual (English, Sinhala and Tamil) android mobile application was developed by National Dengue Control Unit (NDCU), partnering with Ministry of Education and Sri Lanka Mobitel to report fever among children. This allows identification of clusters of fever patients within schools early for mitigating outbreaks by relevant public health authorities. The application was initially pilot tested among government sector schools in the Western Province, which included 1180 schools. The main target audience for reporting fever cases was identified as the teachers and principals of these schools who were identified and trained were identified, liaising with the Provincial Education Ministry of the Western Province. During the pilot phase, the database was accessed by the central level designated members from the Ministries of Health & Education. The surveillance database was scrutinized twice daily by these members to identify any potential risks of clustering.

The definition of a dengue cluster is 'at least two cases located within 150 metres of each other, and whose dates of the onset of symptoms are within three weeks of each other'.

Results: Over a period of 11 months from July 2018 to June 2019, 375 public reports were received. Out of the reported cases 61.6% (n=231) of cases were reported as general fever, 19.2% (n=72) as confirmed, hospitalized dengue cases and 6.1% (n=23) as confirmed Dengue cases receiving domiciliary care. Suspected dengue cases make up 13.1% (n=49) of total reported cases. Out of all the reported cases Western Province has reported the highest percentage of cases of 86.4%, which is followed by the Eastern Province which has reported 10.9% of the total cases. From the reported cases 23 potential clustering of fever cases were identified. Out of the 23 clusters, 13 breeding sites within schools were identified. Out of them 10 clusters were identified as potential foci for the disease. The total number of patients reporting from 23 clusters were 51. Among them, 60% (n= 30) were females while 40% (n=21) were males. Out of 23, 27% (n=13) were primary schools while others were combined primary & secondary schools.

Conclusions & Recommendations: This method promises to be effective in taking early action to prevent outbreaks associated with schools. Also this appears to be successful in getting active involvement from schools for sustainable dengue preventive measures.

Key words: *Dengue, Schools, Surveillance, Proactive action*

OP 81

Direct and indirect patient costs of tuberculosis care in India: a systematic review

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Background: Tuberculosis (TB) is a chronic disease which necessitates repeated health system contacts each imposing costs on patients affecting treatment adherence.

Aims: To conduct a systematic review on the direct and indirect patient cost of tuberculosis care in India.

Methods: A systematic review of articles in English language, conducted in India and published between 2000 to 2018 were searched in electronic databases MEDLINE, PubMed Central, Embase, Web of Science, IndMED and Google Scholar. Total 522 studies were screened and 50 studies were found potentially relevant. References of the articles were reviewed and experts were contacted for any missed articles. Data regarding cost were extracted, inflated to the year 2018 using cumulative inflation rate and converted to US dollars. Studies which provided segregated mean of different phases were added together to get the total cost and studies which didn't report the cost for whole treatment period were excluded for the calculation of total cost.

Results: Thirteen cross-sectional studies including data of 4,595 patients were included in this review.Most of the studies (6) were from southern states. Only six studies reported cost of extra-pulmonary TB and two studies reported the cost of drug resistant TB. The total cost of TB care among pulmonary TB and extra-pulmonary TB patients in public sector ranged from $ 46.3 to $ 792.1 and $ 125.4 to $ 427.0, respectively. The direct cost and indirect cost for pulmonary TB in a public sector ranged from $ 30.8 to $ 79.9 and 12.7 $ to $ 741.3 Only one study reported the direct cost of tuberculosis care among multi-drug resistant (MDR)-pulmonary TB to be 62.0 $ in public sector. The total cost of MDR-pulmonary TB patients, MDR-extrapulmonary TB patients and Extensively Drug Resistant (XDR)-pulmonary TB in private sector was $ 5777.1, $ 5562.0 and $ 8480.4 respectively. The mean pre-diagnostic cost among the pulmonary TB patients contacting private and public health facility first was $ 243.8 and 1 $ 96.0 respectively. The catastrophic cost was experienced by 7% to 32.4% of the TB patients.

Conclusions & Recommendations: Despite free diagnostic and treatment services being provided under the national tuberculosis (TB) control programme, substantial patient costs of tuberculosis care has been reported in India. Policy makers need to take appropriate measures to address this.

Keywords: *Tuberculosis, TB, Cost, India, Catastrophic Cost, Patient Cost*

OP 082

Assessment of noncompliance of Tuberculosis treatment in Intensive phase at Kalutara District

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Aims: Tuberculosis (TB) is an ancient disease and remains to be a public health problem all over the world. Noncompliance to treatment affects TB control and leads to increased mortality, drug resistant TB and relapse. Assessing the factors associated with noncompliance will be useful to reduce the noncompliance and burden of TB.

Aims: To assess the factors associated with noncompliance of TB treatment in intensive phase at Kalutara District.

Methods: This was a descriptive cross-sectional study. Study comprised all 267 new TB patients registered in the District Tuberculosis Register (DTR) Kalutara within a period of six months. Interviewer administered questionnaire and secondary data from DTR, TB treatment card and TB follow up card were used to collect data.

Results: Data were collected from 252 patients and the group consisted of 63.5% (n=160) males and 36.5% (n=92) females. 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 (p<0.05). Side effects of the drugs were significantly associated with noncompliance (p<0.05) to TB treatment. Educational level (p<0.05), living environment of the TB patients (p<0.05) and living alone without a care giver (p<0.05) were significantly associated with noncompliance to TB treatment.

Conclusions & Recommendations: Noncompliance with the treatment is still a common problem among TB patients. Special emphasis should be given to TB patients with education level O/L or below, living in slum areas, estate sectors and patients living alone without a care giver. Motivation for regular drug intake, proper supervision and education should be done for TB patients who have the risk of noncompliance. There was general inadequacy of

adherence to national DOTS policy, within the health care system in Kalutara district. A proper programme should be arranged to make DOT providers adhere to the DOTS policy.

Key words: *Tuberculosis, Treatment, Noncompliance, DOTS*

OP 083

Prevalence of Dengue and knowledge, attitudes, behaviours and capacity of the community for Dengue prevention in Kurunegala district, Sri Lanka

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Background: Dengue is a seasonal vector-born disease which is increased with the onset of the inter-monsoonal rains. The impact of dengue on Sri Lanka is increasing over the last two decades. Kurunegala district reported a drastic spike in the dengue cases during 2017.

Aims: To assess the prevalence of dengue and knowledge, attitudes, behaviours and community capacity for sustainable dengue prevention among householders in Kurunegala district.

Methods: A descriptive cross sectional study was conducted in the highly epidemic Medical Officers of Health area (MOH) in Kurunegala district during January 2019. The required number of 200 individuals in the separate households were selected using simple random sampling method. It was conducted using a pre-tested, validated, interviewer-administered questionnaire.

Results: The response rate was 95.5% (n=191). Prevalence of dengue in the area during 2017 to 2018 was 1.47% (95% CI 1.44 -1.50). Mean knowledge (SD, range) on dengue prevention was 42.5% (16%, 5%–82%). Among the study sample, 8.9% (n=17), 20.9% (n=40), and 70.2% (n=134) had good knowledge (>70 %), adequate knowledge (50% to 70%) and poor knowledge (<50%) on vector bionomics and dengue prevention respectively. Out of them, 66.5% (n=127) had good attitudes on dengue prevention (>70%) and 60.75% (n=116) had good health seeking behaviours (>70%). One fifth of the sample (n=41, 21.5%) had adequate dengue prevention behaviours (>60%) and one third of the sample (n=74, 38.7%) had perceived that the community capacity is adequate (>70%) for dengue prevention in the area. There were statistically significant (p<0.05) correlations (r=0.8) between attitude and the community capacity with the observed dengue prevention behaviours and knowledge with the health seeking behaviours.

Conclusions & Recommendations: Attitudes and community capacity need to be improved to change the behaviour for dengue prevention and knowledge need to be improved to change the health seeking behaviours.

Keywords: *Dengue, Vector-born disease, Knowledge, Attitudes, Behaviours, Community capacity*

OP 084

Socio-cultural and environmental risk factors for leprosy in Jaffna district, Sri Lanka

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Background: The available national and international data suggest that the distribution of leprosy cases is related to socio-economic and demographic factors with some localized high endemic pockets.

Aims: To determine the socio-cultural and environmental risk factors of leprosy in Jaffna District, Sri Lanka

Methods: A case control study was conducted in dermatology clinic, teaching hospital, Jaffna from July 2015 to July 2016. All 97 cases (new and followed-up patients with leprosy confirmed by a dermatologist) and 291 controls (patients with various skin conditions, but leprosy-excluded by dermatologist) by systematic random sampling were recruited. Pre tested interviewer administered questionnaire was used to collect data by the 2 trained data collectors. Univariate, bivariate and multivariate analyses were done using SPSS 21.

Results: Mean age (SD) of cases was 41 (21) and for controls it was 48 (20). Of 97 cases, 54.6% (n=53) were males; 99% (n=96) Tamils; 79.4% (n=77) Hindus; 60% (n=59) above secondary education. Of 291 controls, 42.3% (n=123) were males; 99.3% (n=289) Tamils; 85.6% (n=249) Hindus; 78.4% (n=225) above secondary education. In bivariate analysis, of the socio demographic factors (12 variables), house and environmental factors (11 variables), and behavioral factors (18 variables) many were found to be significantly (p<0.05) associated with leprosy. Marital status, displacement, monthly income, presence of BCG scar, firewood as cooking fuel, and hunting reptiles were not found to be associated with leprosy. Multiple logistic regression analysis showed significant association between leprosy and the following: crowded household [OR=4.5, (1.5-13.6)], non-availability of drinking water within 30 minutes' walking [OR=15.1, (2.3-98.3)], environment with shrub [OR=2.9, (1.4-6.1) , exposure to shrub [OR=2.7, (1.2-5.9), exposure to leprosy patient [OR=10.6, (4.1-27.5)], exposure to fishing [OR=4.5, (1.5- 13.6), visits to leprosy affected area [OR=10.8, (4.7-24.5) and unavailability of safe water source [OR=3.3, (1.2- 9.1).]

Conclusions & Recommendations: These results suggest that in addition to the well-known risk factors environment related risk factors, especially exposure to jungle/shrubs could play a role in the transmission of leprosy. Further studies need to be done to explore the possibility of an environmental reservoir, an animal or a local reptile as a source of infection.

Key words: *Leprosy, Risk factors, Jaffna, Sri Lanka*

OP 085

Entomological Surveillance guided Parasitological Surveillance: An Effective Post-Elimination Strategy to clear last few Lymphatic Filariasis cases in Sri Lanka

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Background: Microfilaria rate in Sri Lanka was <0.5% since 1981. This was further reduced to < 0.05% with five rounds of Mass Drug Administration (MDA) in all eight endemic districts during 2002-2006 and three rounds of MDA in the highest risk Galle district during 2014-2016. Sri Lanka was certified by WHO as a country eliminated filariasis as a public health problem in 2016. Anti Filariasis Campaign (AFC) introduced a new post-elimination strategy aiming to reach total elimination of filariasis by 2021: entomological surveillance guided parasitological surveillance through house to house night blood film (NBF) screening in 2016 to detect reservoir infection in the community.

Aims: To assess the effectiveness of entomological surveillance guided parasitological surveillance to clear last few cases of lymphatic filariasis in Sri Lanka

Methods: This strategy was piloted in high risk MOH areas: Balapitiya and Habaraduwa in Galle district in 2018. Programme was conducted in two stages: collection of mosquito samples by lying traps and identification of larval stages within them and NBF screening programme to identify human cases with filariasis. First, high risk localities within selected two MOH areas were identified by positivity of gravid mosquito traps. Total of 672 mosquito pools (25 mosquitoes per pool) were obtained from 336 traps and they were subjected to molecular diagnostic techniques (RT PCR). All trap locations were mapped and areas to be screened around positive trap sites were marked for human survey. NBF programme was organized along with community mobilization within 200m radius of positive trap sites in order to identify human cases. Thick blood smears were prepared to detect microfilaria by microscopy.

Results: Maximum likelihood filarial DNA rate was 0.64%, 95% CI 0.46-0.85 (trap positivity rate 22.2%, pool positivity rate 33.3%). Total of 51 patients were identified from 31,370 people screened (44% males) from all households within selected areas. Microfilaria rate was 0.16%. Majority (88%, n=45) of patients were males (microfilaria rates 0.32%) and 78% (n=40) were aged >50 years (microfilaria rates 0.29%).

Conclusions & Recommendations: Screening should focus on males and older people. This can be used as an end game strategy with higher coverage in order to plan out focused, high risk screening to detect hidden cases in the community for effective treatment in the post elimination phase in Sri Lanka.

Key words: *Lymphatic Filariasis, Post elimination, Surveillance, Strategy*

OP 86

Development of "Dengue Pathfinder": a real time web-based field dengue control e-surveillance system

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Background: Dengue is a public health problem in Sri Lanka and surveillance is a critical component of any dengue prevention and control programme. The delays in present paper based notification system affects significantly in disease control activities. Increase in morbidity and mortality can be reduced by an efficient e-surveillance system which more efficiently addresses the delays. Dengue Pathfinder was designed to optimize the current Dengue surveillance system and control activities.

Aims: To develop a comprehensive real time e-surveillance system, from notification of the disease to the control, monitoring, outbreak prediction and modeling with real time epidemic tracking system.

Methods: Focus group discussions (FGD) were conducted with the stakeholders to identify the delays and inefficiencies of the current system. Thematic areas highlighted through the FGDs were analyzed. Grid designing for the new system was done based on the inputs from the FGDs. Source coding was done using the structural layouts of each data structures based on the designed grid. The solution was designed in two steps. First the case notification is sent on line via an android application or a web application to the server which includes entering and uploading the case information, saving the data in a data base, sending the notification instantly to the relevant stakeholders via the aforementioned android app. The second step was the online field surveillance, case investigation and saving the information and images in an electronic data sheet. Brainstorming sessions were conducted to design this to enable saved data reaching different levels of stakeholders with scientific field level indicators to identify and monitor field level control activities with in a short time. This was an iterative process where each designed IT solution was pilot tested in the field and modified based on the inputs of the PHIs and MOHs.

Results: Notification of dengue is possible through the Dengue Pathfinder by anyone who downloads the Android app or the web app. Auto generated reports on field activity which have been restricted at user levels give necessary indicators to evaluate the control program and to adjust according to the disease dynamics. Trend analysis and density maps have a significant impact on identifying and control of outbreaks. The geo details of the case viewed by the Google map are very useful when planning control activities on indicators.

Conclusions & Recommendations: This e-surveillance system mitigates many shortages of the existing dengue surveillance systems of the country. This is recommended to be pre-tested in few MOH areas to identify the pragmatic issues during use.

Key words: *Dengue e-Surveillance, Dengue notification, Dengue Control & Monitoring, Dengue outbreak prediction*

OP 087

Histoplasmosis among HIV positive Indian population: A study from a tertiary care institute

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Background: Histoplasmosis is a close mimic of tuberculosis (TB) in every sense including clinical presentation of initial pulmonary involvement and systemic dissemination. Fever with anorexia, weight loss, organ involvement especially the reticuloendothelial system is typical of both diseases. The HIV patients with histoplasmosis in developing countries are mostly treated as TB bases on clinical suspicion and radiological findings. The patients non-responsive to first line therapy are identified as multidrug resistance TB (MDR TB) and given a full course of second line anti-TB drugs. These patients develop disseminated histoplasmosis which has a high mortality. Appropriate diagnosis is key in correct management of these patients. There is very limited knowledge about the actual burden of histoplasmosis in HIV population. Majority of these patients present with disseminated disease when the CD4 count falls below 150/μL

Aims: To study the prevalence of histoplasmosis patients with HIV

Methods: A cross-sectional study was conducted at a tertiary care institute i.e. Department of Microbiology and Department of Medicine of A.I.I.M.S., New Delhi for a one-year period. Convenient sample of 175 HIV patients were included for the study. All patients with HIV attending the antiretroviral treatment (ART) clinic, with CD4 count < 500/μL and who were ART naïve were enrolled to this study. Histoplasma urinary antigen detection was conducted using ELISA technique and demographic details were collected.

Results: A total of 175 patients were enrolled for the study out of which 15 patients showed presence of histoplasma urinary antigen (8.5%) with a mean CD4 count of 81 cells/mm^3 (range 0-232cells/mm^3). Fever (low grade) was the commonest presentation (87%, n=13), followed by cough (80%, n=12) and weight loss (67%, n=10) among the patients with histoplasmosis. There were two patients each with diarrhoea and oral thrush. One patient had co-infection with Hep B and C. Seven of the 15 positive patients could be started on itraconazole. Rest of the patients have been called for follow up.

Conclusions & Recommendations: Histoplasmosis is being increasingly recognized as an important but underrecognized opportunistic infection in India. Regular screening of all patients with CD4 count less that 500 cells/mm3 with fever should be performed to prevent disease related morbidity and mortality.

Key words: *Histoplasmosis, HIV, Treatment naïve, CD4 cells, Urinary antigen.*

OP 088

Risk behaviors related to Human Immunodeficiency Virus (HIV) / Acquired Immune Deficiency Syndrome among Fisherman in Coastal Area of Batticaloa District

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Background: Fishermen generally have risk factors which make them vulnerable for Sexually Transmitted Diseases (STI) & HIV. It is further challenged nowadays by rapidly expanding tourist industry especially to the coastal region of the country.

Aims: The study aimed to assess the knowledge, attitudes and behaviours of fishermen in the Batticaloa District

Methods: In this community-based cross-sectional study, multi stage cluster sampling method was used to select 498 fishermen living in the fishing villages. An interviewer administered questionnaire was used for data collection. The data collection was done by well-trained data collectors during August to November 2018. Data were analyzed using SPSS 21 and presented with frequency distributions and cross tabulations.

Results: Response rate was 97% (n=498). The mean age of the fishermen was 36.6 years, of them 73.3% (n=365) were Tamils and 25.7% (n=128) were Muslims which was almost similar to the district distribution. Only 245 of participants had comprehensive knowledge on HIV/AIDS. 91.6 % (n=456) were heard about HIV, 66.7 % (n=332) had poor knowledge while 31.1% (n=155) had average knowledge. 80% (n=398) of the participants thought that mosquito can transmit HIV. Nearly 68.5 %(n=341) knew that there was no permanent cure for HIV but only 25.9% (n=129) heard about treatment available. Majority (87.3%, n=435) of them knew about sexual mode of transmission. Knowledge on male to male (MSM) transmission was found to be 44.4% (n=221) however, 2.45 % (n=12) of the participants reported involving in MSM activity. Further risk behaviors reported were as follows: 7% (n=35) having sex with non-regular partner; 3.2% (n=16) having sex with female sex workers; 1.8% having sex with foreigners. Considering the condom use, 60.6 % (n=202) have ever seen a condom and 28.3% have used it. Main reasons for not using condoms were personal dislike and not considering it as a need due to the trust towards the partners.

Conclusions & Recommendations: Overall knowledge was poor and attitudes of the fishermen need improvement with community based programmes.

Key Words: *Fishermen, HIV*

OP 089

Asymptomatic dengue infection burden in the district of colombo

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Background: Dengue has been reported in Sri Lanka from early 1960s and is now endemic in all districts, with the highest proportion of cases being reported in the Colombo district. Those infected with dengue but remaining asymptomatic play a major contribution to the viraemic pool and continuous transmission. Previous exposure to Dengue virus is a known parameter enhancing the efficacy of the currently available dengue vaccine. In this backdrop, information on previously infected proportion of Dengue would significantly influence a future vaccine strategy.

Aims: To determine the proportion of asymptomatic Dengue infections in the Colombo district, to assist in policy decision making in the introduction of a successful vaccination strategy.

Methods: A community-based cross-sectional descriptive study of 1,625 samples of >1 to 60 year-olds using an age-stratified multistage cluster sampling method was carried out to assess the seroprevalence of Dengue in the Colombo District in 2017. Recollection of a past history of Dengue infection was also assessed and verified with available clinical documents. Dengue IgG seroprevalence was cross analyzed with this previous exposure details.

Results: The serological analysis revealed an overall 72.1% (n=1,172; 95% CI, 69.9-74.5) IgG sero-positivity with high seroconversion rates of 85.9% (n=335) seen in metropolitan areas of the Colombo district compared to 70% (n=615) in urban and 62.4% (n=222) rural areas. Of those seroconverted, 84.7% had denied any past history indicating the high asymptomatic disease burden. This burden was 84.8% in the urban areas and 84.2% in the rural areas. Of those who had denied any past history of Dengue, 69.5% were found to be already IgG seropositive. The ability to recall no past exposure to confirm with being seronegative was nearly 30%.

Conclusions & Recommendations: Nearly 85% of those who were Dengue IgG seroconverted recalling no previous exposure or illness implies that a major proportion of those infected were asymptomatic in both urban and rural settings. This high asymptomatic disease burden and the inability of nearly 70% to recall a past Dengue exposure should enable health policy makers to decide on the practicalities of planning, implementation and operationalization of a future vaccination strategy.

Key words: *Disease Burden of Dengue, Asymptomatic Disease Burden, Seroprevalence, Seropositivity, Sero-epidemiology of Dengue*

OP 090

Influenza surveillance activities in Sri Lanka

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Background: Influenza surveillance activities are carried out through sentinel site surveillance in Sri Lanka. Human and animal influenza surveillance activities are expected to act as the early warning system for a possible Avian/ pandemic influenza outbreak in the country.

Aims: To describe the human, laboratory and animal influenza surveillance activities carried out in Sri Lanka.

Methods: Human influenza surveillance comprises of two main components; Influenza like illness (ILI) surveillance and Severe Acute Respiratory Infections (SARI) surveillance. ILI surveillance, carried out in OPDs of the 19 sentinel hospitals throughout the country, out of which 13 sentinel hospitals have been selected for laboratory surveillance where respiratory samples are collected. Under SARI surveillance more detailed epidemiological data and respiratory samples are collected from inward patients at four sentinel hospitals. Laboratory surveillance is performed by the National Influenza Centre at the Medical Research Institute for both ILI and SARI samples. Nasopharyngeal swabs, oropharyngeal swabs or tracheal aspirates are sent from selected ILI patients and SARI patients. These samples are subjected to PCR for typing, subtyping and further categorization is performed by cell culture to identify circulating strains. Animal influenza surveillance is carried out by the Department of Animal Production and Health (DAPH). Bird droppings and cloacal swabs from migratory birds' hot spots in the country and serum samples from commercial layers and backyard poultry farms are tested for highly pathogenic avian influenza.

Results: A seasonal variation of influenza can be observed throughout the year. A major peak can be observed from April to June and a small peak from December to February. Mainly circulating viruses among humans are influenza A H_1N_1 and H_3N_2 and influenza B. Influenza A viruses are detected during the middle part of the year whereas influenza B is detected in the latter part of the year. None of the tested samples were positive for Avian Influenza during the last five years by DAPH.

Conclusions & Recommendations: Influenza surveillance activities play an important role in understanding the epidemiology of the disease and the circulating virus pattern. All ILI and SARI surveillance activities should be further strengthened and laboratory facilities need to be expanded and streamlined.

Key words: *Influenza, Surveillance*

Oral Presentations

Day 2: 20th September 2019, 3:30 am - 5:00 pm, Oak Room 1

FREE PAPER SESSION 9: CANCER & PALLIATIVE CARE

Chairpersons : Dr. Suraj Perera   **Dr. Shreenika De Silva**

OP 091

Delays in breast cancer care in Sri Lanka

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Background: Despite excellent prognosis if treated at early stages, breast cancer was the leading cancer specific cause of death in Sri Lanka throughout the last decade. Planning strategies to combat this public health issue invariably requires an in-depth understanding of when, where and why delays in breast cancer care.

Aims: To describe delays in breast cancer care experienced by female survivors attending state cancer treatment centres in Sri Lanka.

Methods: This hospital-based cross-sectional study assessed 800 consecutively sampled female breast cancer survivors attending four out of the nine state Provincial Cancer Treatment Centers. Presentation delay (detection of suspicious breast lesion by self until woman presents to a health care provider>2weeks), diagnosis delay (presentation to a health provider until a definitive diagnosis of breast cancer is made>4weeks), treatment delay (definitive diagnosis until primary treatment is initiated>4 weeks) and overall delay (detection of suspicious breast lesion by self until primary treatment is initiated>10 weeks or detection of suspicious breast lesion by a health care provider until primary treatment is started >8 weeks) were defined upon agreement of a panel of experts to suit the local context. An interviewer-administered questionnaire was used to capture the time intervals spent between essential care points along different care paths available in the local health system and the timings were verified using medical records. Proportions of breast cancer survivors who experienced different types of delays were described along with 95% CI.

Results: Mean age (SD) of the study sample at the diagnosis of breast cancer was 55.5 years (+10.7). Medians (IQR) of presentation, diagnosis and treatment intervals were 4.3 (0.0-9.3) weeks, 3.7 (2.3-5.7) weeks and 2.3 (1.4-3.1) weeks respectively. Presentation delay was experienced by many (63.3%, 95% CI=59.9-66.6%). Diagnosis delay (36.7%, 95% CI=33.4%-40.0%) and treatment delay (13.2%, 95% CI=10.8-15.5%) were less common. Overall delay in breast cancer care was experienced by 57% (95% CI=53.6%-60.4%).

Conclusions & Recommendations: Many female breast cancer survivors in Sri Lanka have experienced delays in presenting to a health provider. Diagnosis delay and treatment delay were less common compared to other low middle-income countries. Future research should aim obtaining an insight into the reasons for presentation delays and interventions to improve.

Key words: *Breast cancer, Delay in care, Presentation delay, Diagnosis delay, Treatment delay, Sri Lanka*

OP 092

Effectiveness of neoadjuvant chemotherapy versus adjuvant chemotherapy for the treatment of resectable cancers: systematic review and meta-analysis

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Background: Neoadjuvant chemotherapy is increasingly adopted as an initial treatment before surgical resection of various cancers. However the relative benefits of administering chemotherapy before (neoadjuvant) versus after (adjuvant) surgery remain contentious.

Aims: To synthesise evidence from randomised controlled trials (RCTs) across different types of resectable cancers to elucidate the relative effectiveness of neoadjuvant versus adjuvant chemotherapy and to test hypotheses concerning underlying mechanisms

Methods: We searched MEDLINE, EMBASE, CDSR and clinicaltrials.gov in 2018 for relevant RCTs. Reference lists of published systematic reviews of neoadjuvant chemotherapy were examined to identify further studies. RCTs reported in English that directly compared the administration of the same regimen of chemotherapy before versus after the surgical resection were included. We examined local recurrence, death and recurrence events, all-cause mortality and surgical complications, and carried out random effects meta-analyses stratified by types of cancer and whether the whole course of chemotherapy was administered prior to surgery in the neoadjuvant arm.

Results: Twenty-two RCTs (total n=7173) covering breast, lung, oesophageal, gastric, pancreatic, bladder and ovarian cancers were included in the review, with most patients having breast (n=4181) and ovarian (n=1561) cancers. Neoadjuvant chemotherapy is associated with an increased risk of local recurrence in breast cancer (relative risk [RR] 1.39, 95% CI 0.99 to 1.95), a decreased risk of all-cause mortality in oesophageal cancer (RR 0.73, 0.54 to 0.99) and a decreased risk of surgical complications in ovarian cancer (RR 0.30, 0.12 to 0.75) compared with adjuvant chemotherapy. Pooled estimate across all types of cancer demonstrates similar outcome in all-cause mortality between neoadjuvant and adjuvant chemotherapy (RR 0.96, 0.88 to 1.06).

Conclusions & Recommendations: Current evidence does not support the hypothesis that neoadjuvant chemotherapy reduces spillage of cancerous cells to remote sites following surgery. Further studies evaluating newer neoadjuvant

chemotherapeutical regimens and/or comparing neoadjuvant with adjuvant chemotherapy in cancers not well covered in this review will help elucidate underlying mechanisms of these options and guide treatment decisions.

Key words: *Neoadjuvant therapy, Adjuvant therapy, Resectable cancer, Effectiveness*

OP 093

Validation of risk prediction model for endometrial carcinoma among postmenopausal women in the Western province of Sri Lanka

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Background: A risk prediction model was developed to predict the risk of developing endometrial carcinoma among postmenopausal women. It is strongly recommended to evaluate the performance of the risk prediction model by external validation before using in the community.

Aims: To validate a risk prediction model for endometrial carcinoma among postmenopausal women in the Western province.

Methods: An unmatched case control study was conducted to validate a developed model, including 35 cases and 50 controls of postmenopausal women from five tertiary hospitals in the province during June to October 2017. The cases and the controls were defined as postmenopausal women who had and had not been diagnosed as endometrial carcinoma based on histological confirmation respectively. A model was developed considering the objectivity and feasibility of the measurements in addition to the statistical criteria. The developed model consisted of six predictors: Age >55 years, never conceived, age at menarche ≤11 years, ever experienced postmenopausal bleeding, having family history of any type of cancer among first degree relative, generalized obesity. A scoring system [1-9] was used based on weighted score of each risk predictor. An interviewer administered questionnaire was used. Predictive validity of the model was tested by calibration and discrimination. ROC curve was used to determine the cut-off value.

Results: The area under the ROC curve was 0.78 (95% CI: 0.68-0.88). This indicates the ability of the total risk score to correctly classify those with and without disease is 78%. The calibration of the model was satisfactory (Hosmer-Lemeshow test $\chi2=2.07$, p=0.84). The model correctly predicted 71.8% of the observed outcomes with overall classification. At a cut-off point of 3.5, the risk prediction model demonstrated a sensitivity of 65.7% (95% CI: 47.7%-80.3%), specificity of 76.0% (95% CI: 61.5%-86.5%), positive predictive value of 65.7% and negative predictive value of 76.0%.

Conclusions & Recommendations: The model demonstrated valid predictions as a risk prediction tool. It is recommended to incorporate the validated risk prediction model into the existing health care system to prioritize the women who need further investigations or close follow up.

Key words: *Risk prediction model, Endometrial carcinoma, Postmenopausal women, Validation*

OP 094

Development of well women clinic positive client's follow up register

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Background: For a screening program to be effective, it needs a proper follow-up and management of screened positives. Until 2015 Sri Lanka had no document for cervical cancer screened positives follow-up.

Aims: To develop a document to follow-up cervical cancer screening test positive women.

Methods: Method to develop the document was determined after reviewing literature and discussing with experts related to cervical cancer screening. Initially, documents and follow-up process used by national health programmes were reviewed, including those used by Well Woman Clinic (WWC) package which contains cervical cancer screening. The documents' purpose, information contained, practicality, ability to convey information from field level to central level were noted. Interviews with WWC programme stakeholders including two programme managers, Medical Officer of Health (MOH), staff of three MOH offices, two gynaecologists, pathologist and cyto-screener were conducted. Identification of variables, data sources for the variables, document structure and data flow were discussed. Draft document was developed and refined using Delphi consensus method by an expert group of three MOH, six MOH staff, Medical Officer Maternal Child Health and programme manager. Feasibility and acceptability of obtaining information was assessed by interviewing Pap smear screened positive women. WWC Positive Client's Follow up Registerand instruction manual were developed through consultative meetings at Family Health Bureau. Pilot testing was done by National Programme at district level.

Results: In the initial round of discussions the document structure was assessed as a card. On subsequent two rounds of discussions it changed to a register. Percentage of agreement of structure, content and responsible person to enter the data in rounds one, two and three were 45% (n=5), 64% (n=7) and 100% (n=11) respectively. Register contained the following information: registration and Pap smear dates, name and address, Public Health Midwife (PHM) area; registration, serial, telephone and Pap numbers. For each follow-up, the result, action taken, follow-up place and plan are to be entered. This register is to be updated by PHM and supervised by MOH. Obtaining information was feasible and acceptable as observed during pretesting. Percentage women with follow-up completed at one, six and twelve months and annually for five years were identified as indicators to review the follow-up process.

Conclusions & Recommendations: well women clinic Positive Client's Follow up Register was introduced nationally in 2018 to MOH offices. It is recommended to ensure follow-up of cervical cancer screened positive women by reviewing percentage of women with follow-up annually.

Key words: *Well women clinic, Follow up register*

OP 095

Prevalence and attributes of cervico-vaginal Human Papilloma Virus infection among ever married 35 age cohort women in Kalutara district

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Background: Cervical cancer is the 2nd leading cause of female cancer in Sri Lanka and annually 1721 new cases of cervical cancers are diagnosed and 690 women die from the disease, according to the 2012 estimates. Cervical cancers are virtually associated with sexually transmitted human papilloma virus (HPV) infection. Persistent infection with carcinogenic HPV types is the cause of most cervical cancers. Genotypes 16 and 18 contribute for about 70% of cervical cancers worldwide.

Aims: To assess the overall prevalence, prevalence of genotype 16 & 18 and attributes of cervico-vaginal HPV infection among ever married 35 age cohort women in Kalutara district.

Methods: A cross-sectional study was conducted in the MOH areas of Kalutara district (sample size=822). Cluster sampling technique was used. A Public Health Midwife area was taken as a cluster and the number of clusters were 413. HPV-DNA cervical specimen collection was carried out by MOOH/PHNSS at Well Woman Clinics in the community. Information on attributes were gathered by using an interviewer administered questionnaire.

Results: The overall prevalence of the cervico-vaginal HPV infection was 6.2%, and the prevalence of high risk genotypes 16 & 18 was 1.94%. The prevalence of 12 pooled high risk cervico-vaginal HPV infection was 4.14%. There were significant associations of cervico-vaginal HPV infection with early marriage ≤ 24 years (OR=4.098, 95% CI: 2.11-7.95, p<0.001), duration of time between marriage and first pregnancy>5 years (OR=2.005, 95% CI: 1-4.04, p<0.05), number of vaginal delivery>2 (OR=6.91, 95% CI: 3.42-13.82, p<0.001), any abortion (OR=5.48, 95% CI: 2.44-12.32, p<0.001) and hormonal contraceptives use of $\geq$ 3 months (OR=9.5, 95% CI: 5.16-17.52, p<0.001). Single sexual partner (OR=0.061, 95% CI: 0.047-0.08, p<0.001) and condom ever use by spouse at coitus (OR=0.25, 95% CI: 0.08-0.81, p<0.05) were significant protective factors against cervico-vaginal HPV infection.

Conclusions & Recommendations: These findings suggest that the prevalence of HPV infection among 35 age cohort women is an emerging public health problem in Sri Lanka. HPV-DNA screening as a cervical cancer screening method should be considered.

Key words: *Cervical cancer screening, Papsmear test, HPV/DNA screening test*

OP 096

Non-cancer palliative care: knowledge, attitudes and associated factors among medical officers of primary and secondary care institutions in Colombo district

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Background: Palliative care is an emerging medical specialty which require due attention of all healthcare professionals. Due to epidemiological and demographic transition, the number of non-cancer patients needing palliative care shows a rising trend. To fulfill this need, medical officers with good knowledge and favourable attitudes on non-cancer palliative care are required.

Aims: To describe the knowledge, attitudes and associated factors on palliative care for non-cancer patients among medical officers of primary and secondary health care institutions in Colombo district

Methods: A descriptive cross-sectional study was conducted among all eligible medical officers of primary and secondary health care institutions in Colombo district (N=457) using a pre-tested self-administered questionnaire. Overall knowledge and knowledge on different components (concept of palliative care, pain management, symptom management, disease specific management, paediatric palliative care, end of life care and communication in palliative care) were assessed using median total marks as the cut off values. Overall attitudes were assessed using the mean score. Chi-square test was used for associations (p<0.05).

Results: Response rate was 85.6% (n=391). Overall knowledge on non-cancer palliative care (n=210, 53.7%) and on all the assessed components were poor except for the concept of palliative care. Good level of knowledge was significantly associated with younger age (p=0.04), service duration $\leq$ 10 years (p=0.009), possessing a postgraduate qualification (p=0.02), working in a medical unit (p=0.01), attending training programmes on non-cancer palliative care (p=0.009), updating knowledge on non-cancer palliative care (p=0.006) and ever managed non-cancer palliative care patients (p<0.001). Majority (n=343, 87.7%) had favourable attitudes and it was significantly associated with previous history of working in a tertiary care institution (p=0.04).

Conclusions & Recommendations: The study revealed that good level of knowledge was associated with postgraduate qualifications and attending training programmes. Therefore, it is recommended to conduct more in-service training programmes on non-cancer palliative care and non-cancer palliative care should be incorporated into undergraduate curriculum.

Key words: *Non-cancer palliative care, Medical officers, Primary health care, Secondary health care*

OP 097

Health related quality of life and its determinants among breast cancer survivors followed up at National Cancer Institute Maharagama Sri Lanka

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Background: Breast cancer is the commonest cancer among females in Sri Lanka and they are treated with

different methods such as mastectomy, chemotherapy and radiotherapy. Both the disease (breast cancer) and treatment methods reduce overall Health Related Quality of Life (HRQoL) among breast cancer survivors. Research which has assessed how HRQoL is related with the breast cancer and its treatment methods among breast cancer survivors in Sri Lanka is few and between.

Aims: To determine HRQoL and its determinants among breast cancer survivors followed up at National Cancer Institute Maharagama (NCIM) Sri Lanka.

Method: A descriptive cross-sectional study was conducted at clinics in the NCIM among histologically confirmed breast cancer patients. The total sample size was 300. All eligible patients were recruited to the study following informed written consent. An interviewer administered questionnaire was used to obtain socio – demographic data and data extraction form was used to ascertain information on modes of treatments. WHOQOL – BREF instrument was used to assess HRQoL. The independent sample t-test was used to assess relationships between HRQoL and its determinants. Multiple linear regression analysis was conducted to identify the predictors of HRQoL among breast cancer survivors.

Results: The mean age of the study population was 55.9 years (SD=9.9). Majority of participants (92%) underwent mastectomy while 2.3% were treated with radiotherapy alone. Both mastectomy and chemotherapy were offered for 71% participants and 13.7% were treated with all three methods. 5.7% participants were awaiting initiation of treatment. The HRQoL was assessed in four domains named as physical, psychological, social and environmental. Mean scores among study population were 61.94 (SD = 16.33), 58.16 (SD = 16.64), 52.95 (SD=21.14) and 65.91 (SD=15.99) respectively. In univariate analysis, none of the socio – demographic factors were significantly associated with HRQoL. However, mastectomy, chemotherapy and radiotherapy were significantly associated with low scores in all four domains of HRQoL (p<0.05). Multivariate analysis showed that, chemotherapy was the most important predictor which determine a low level of HRQoL among breast cancer survivors in all four domains (p<0.001).

Conclusion & Recommendations: Breast cancer survivors had a low level of HRQoL following mastectomy, chemotherapy and radiotherapy. Chemotherapy was the main factor which determine a low level of HRQoL among them. Measures need to be taken to improve HRQoL after treating them with different methods. More comprehensive studies need to be conducted to explore reasons for low level of HRQoL especially following chemotherapy.

Key words: *Breast cancer survivors, Health Related Quality of Life, Chemotherapy, Radiotherapy, Mastectomy*

OP 098

Validity and reliability of a Sinhala translated version of Short Form Brief Pain Inventory among patients with cancer pain attending the Pain Clinic, Apeksha Hospital, Sri Lanka

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Background: Pain is one of the most common and detrimental symptom for patients with advanced cancer. Careful assessment of pain using a validated pain scale is a prerequisite to managing pain efficiently in patients with cancer. The Short Form Brief Pain Inventory (SF-BPI) is a tool widely used assessing 4 pain intensity, 7 pain interference and 4 general and medication related items. It is validated among patients with cancer related and chronic pain and has been translated and validated to several languages. Sinhala, being the native language of the majority of Sri Lankan population, the availability of validated pain scales in Sinhala language facilitates assessment of pain and its interference on function among Sinhala speaking patients with cancer.

Aims: To assess the validity and reliability of a Sinhala translated version of SF BPI among patients with cancer pain.

Methods: Study included patients with cancer pain attending the Pain Clinic, Apeksha Hospital, Sri Lanka. Translation steps followed include forward translation, backward translation, opinion from experts, cognitive debriefing interviews and proof reading which were according to the guidelines given by MD Anderson Cancer Center. The content validity was tested by requesting opinions of experts and face validity by cognitive debriefing interviews with patients with cancer pain. The construct validity of the scale was evaluated with exploratory factor analysis and reliability tested by internal consistency with Cronbach's alpha.

Results: A total of 151 participants (79 males and 72 females) aged between 20 - 80 years were included in the study. Both face and content validity were found to be acceptable. Factor analysis of the SF BPI Sinhalese version resulted in two factors, pain intensity and pain interference, showing valid structures consistent with other language versions. These two factors explained 60.8% total variance of the SF BPI Sinhala version. Cronbach's alpha computed for pain interference and pain severity items were 0.868 and 0.819 respectively, which were over the acceptable threshold of 0.7.

Conclusions & Recommendations: Sinhalese version of the SF BPI is a reliable and valid instrument for the assessment of pain intensity and its interference on function among Sinhala speaking patients with cancer in Sri Lanka.

Key words: *Brief pain Inventory Sinhalese version, SF BPI, Cancer pain, Pain assessment, Psychometric properties*

OP 099

Gender based violence in disaster situation: Identification and management competencies of public health staff in Galle district

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Background: Gender based violence (GBV) is a public health issue that is common but under reported all over the world. It is noted that GBV incidence increases in disaster situations. Public health staff are the key responsible personals in post-disaster health management. Hence, their competencies in managing GBV in crisis situation is important.

Aims: Present study investigated knowledge on identification, prevention and management of GBV in disaster situation among different categories of public health staff workers.

Methods: A descriptive cross sectional study was conducted in conveniently selected 8 MOH areas in Galle district, including all public health staff working in those MOH areas. A self-administrated questionnaire assessed the knowledge on awareness, prevention and management of GBV in disaster situations. Three categories of knowledge were compared between four categories of staff working at MOH office by using ANOVA with post hoc comparison. Knowledge on GBV was compared between the trained and untrained staff by using independent sample t-test.

Results: Among 200 public health workers, only 23.5% (n=47) had training on disaster management and only 34.0% (n=16) of them were taught on GBV. Knowledge on GBV was average in the staff (mean=28.4, SD=3.9). There was no significant difference observed in awareness ($F(3, 199) = 1.1$, $p = 0.3$), prevention ($F(3, 199) = 0.5$, $p = 0.7$) and management ($F(3, 199) = 1.3$, $p = 0.3$) of GBV in between different employment categories of the staff. Knowledge on GBV was not different between the trained and untrained staff ($t (198, 200) = .8$, $p= 0.4$).

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

Key words: *Gender based violence, Disaster management*

OP 100

Factors associated with quality of care among institutionalized elders in a selected municipal area in Sri Lanka: A qualitative study

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Background: "Elderly" has been defined as a chronological age 65 years old or more. Presently the population of people aged 60 years and above is increasing rapidly in the world. Residential care or personal care homes offer personalized service to small groups of elders. The quality of life of the institutionalized elders depend on physical care as well as psychological care they receive.

Aims: To identify factors associated with quality of care among institutionalized elders in Sri Lanka.

Methods: Phenomenological study design was used to conduct the study. Structured interviews (SI) were conducted by the investigator in order to obtain the factors associated with quality of care received by elders at the elderly homes after obtaining ethical approval from the Ethical Review Committee of Faculty of Medicine, University of Ruhuna, Sri Lanka. Fifty five participants were recruited by using convenient sampling technique at all the elderly homes in Galle Municipal area. Informed consent was obtained from the participants before starting data collection. SIs were conducted in Sinhala according to the pre tested interview guide to maintain uniformity. Data collection was done till data saturation was achieved. Fifty SIs were conducted with elders and Five SIs were conducted with caregivers. SIs were transcribed verbatim. Data analysis was done manually, using thematic analysis.

Results: Four major associated factors were identified; physical care factors, psychological care factors, social care factors and spiritual care factors. Physical environment and living arrangement were main sub themes for physical care whereas social support was for social care. Counselling, recreational factors and spiritual factors were the main sub themes for the better psychological care among institutionalized elders.

Conclusions & Recommendations: There are four major domains to address when providing care in order to improve the quality of life among institutionalized elders in Sri Lanka. These domains correspond to the different aspects of holistic care.

Key words: *Quality of care, Institutionalized elders, Quality of life, Holistic care*

OP 101

A study on the consumer's knowledge and perception on food additives in Galle

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Background: Food additives are substances that are added to food for maintaining or improving the safety, freshness, taste, texture, or appearance of foods. Most food additives that are currently in use have been found to cause health problems.

Aims: To investigate the consumer's knowledge and perception on food additives in Galle.

Methods: A descriptive cross sectional study was conducted using convenient sampling method, among 305 participants aged 30-50 years old. The participants were recruited for the study at MOH of Galle, Divisional Secretariat, Galle and from a private company. Data were collected by a pre-tested self-administered questionnaire. It comprised three main sections, Part A, B and C. Part A consisted of demographic data, Part B questions related to knowledge of food additives and part C to perceptions of food additives. Data were analyzed using descriptive analysis, Chi-square test, t-test and ANOVA using SPSS 22 version.

Results: The knowledge score on food additives in 73.7% (n=225) of the study sample was poor, in 20.7% (n=63) average and in 5.6% (n=17) good. Only 36.1% (n=110) of participants knew about the "E" numbers in foods and 89.8% (n=274) of participants believed food additives cause adverse effects on their health. There were significant differences between knowledge of food additives and educational level (p=0.001) and occupation (p=0.012). Graduates are more knowledgeable than the participants who had lower educational levels. Professionals are more knowledgeable regarding food additives than unemployed and non-professionals workers. Usage of food additives showed significant differences with educational levels (p=0.019) and ethnicity (p=0.009). Tamil and Muslim consumers use more food additives than Sinhalese people and graduates have a limited usage. Females have the habit of reading food label than males (p=0.032). Majority (n=242, 79.3%) had the habit of reading food labels.

Conclusions & Recommendation: Overall knowledge of consumers regarding food additives was poor. Majority were not aware of the "E" number in foods. Study emphasized the value of conducting educational programmes to improve the awareness of the consumers on the food additives.

Key words: *Food additives, Knowledge, Perception*

OP 103

Knowledge, attitude and practices of contraception among male spouses, their involvement in family planning decision making and its associated factors in the Medical Officer of Health area Deraniyagala

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Background: Traditionally, the family planning programmes have focused mainly on women ignoring the crucial role played by men in the family's decision-making process. Excluding men from family planning services, can have an adverse impact on the overall contraceptive prevalence.

Aims: To describe the knowledge, attitudes and practices of contraception among male spouses and to assess their involvement in family planning decision making and its associated factors in the Medical Officer of Health area Deraniyagala.

Methods: A community based descriptive cross-sectional study was conducted, among the married males, whose female spouses were between 15 - 49 years. Multi-stage cluster sampling method was applied to obtain the calculated sample size of 507 among 16 clusters. From each cluster, the first household was selected randomly. A pre-tested interviewer-administered questionnaire was used to collect the data.

Results: Response rate was 95.6% (n=485). Among them, the majority (n=476, 99.2%) were aware of family planning. Male condoms was the highest known method (n=440, 92.4%), followed by oral contraceptive pills (n=311, 65.3%) and hormonal implants (n=155, 32.6%). A low percentage (n=63, 15.4%) of male spouses were currently practising any contraceptive method. Only 33.1% (n=159) of participants had a satisfactory knowledge whereas 56.9% (n=273) had a positive attitude towards family planning. There were 64.7% (n=262) of participants who demonstrated a good involvement in decision making related to family planning. Male spouse's residence (OR = 2.3; 95% CI: 1.4 – 3.9; p = 0.001), age (OR = 0.5; 95% CI: 0.3 – 0.7; p = 0.002), monthly income (OR = 0.6; 95% CI: 0.3 – 0.9; p = 0.016), age at marriage (OR = 0.6; 95% CI: 0.2 – 0.8; p = 0.002), duration married (OR = 0.4; 95% CI: 0.3 – 0.7; p = 0.001) and the knowledge on family planning (OR = 2.2; 95% CI: 1.4 – 3.2; p < 0.001) showed statistically significant associations with their involvement in family planning decision making.

Conclusions & Recommendations: A high percentage of males had an unsatisfactory knowledge, but a positive attitude towards family planning. Majority showed a good involvement in decision making. But the current practices of contraception among males was poor. Hence, family planning services and information need to target men more specifically to increase their knowledge and participation

Key Words: *Family planning, Male spouse, Decision making*

OP 104

Project Beautiful Beach Beruwala: A case study of inter-sectoral collaboration

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Background: Rampant coastal pollution in Beruwala has remained a vexing issue for local authorities. Approximately 15% of all Dengue cases reported in the Beruwala MOH

area are reported around Beruwala harbour. After a situation analysis and prioritizing the feasible interventions it was decided to initiate a coastal environmental health promotion project in Beruwala in February 2019.

Aims: To strengthen inter-sectoral collaboration in promoting coastal environment protection in Beruwala

Methods: Following an extensive stakeholder analysis, all relevant parties were brought to the discussion table at the inaugural meeting of the project where a committee responsible for the oversight of activities was formed with representatives from all sectors. A common action plan was formulated with the consensus of all parties involved. Following a subsequent meeting held at the Fisheries harbour, it was decided to conduct massive clean-up campaign to sensitize the community to the matter at hand with the participation of various authoritative figures in the locality. It was agreed to draft and implement the necessary plans to promote coastal environmental promotion.

Results: The inaugural meeting held initially in constituency building where various parties involved in coastal environmental protection decided to act according to a common action plan which enhanced the synchronicity of their duties performed. An advocacy session with the higher-most officials of the Fisheries Ministry was followed by the said agency taking the lead in implementation of planned actions. The massive coastal clean-up campaign that helped secure a favorable political backdrop for the sustenance of the project sensitized the relevant authorities and the community. It was agreed upon by all the stakeholders to pilot this experience in other harbours and the Fisheries Ministry coincided with the agreement that all fisheries harbours need to have solid waste disposal plans approved by Marine Environment Protection Authority. Partnership developed with Manusath Derana, agreed upon keeping track of the continuous monitoring of the involvement of the relevant stake holders in the sustainable maintenance of a clean and healthy coastal environment.

Conclusions & Recommendations: Inter-sectoral co-ordination was identified as a quintessential approach in addressing cross cutting issues in the community which requires effective partnerships, tactful advocacy, acknowledgement of accountability and constituency building in striving towards achieving public health goals.

Key words: *Coastal environment protection, Constituency building, Intersectoral collaboration*

OP 105

Groundwater fluoride in Sri Lanka: Opportunities to mitigate the risk at maximum contaminant level

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Background: High groundwater fluoride is one of the major environmental hazards in the dry zone of Sri Lanka. The prolonged exposure to fluoride at maximum contaminant levels can give rise to lifelong debility and disability among its inhabitants.

Aims: This study investigated the fluoride contamination in groundwater resources in Sri Lanka above recommended Maximum Contaminant Levels (MCL) and possibilities to mitigate the health risk.

Methods: Groundwater samples (6107) were randomly collected from different geographic areas of the country, and categorized as hazardous, if it exceeded the maximum contaminant level of 4 mg/L (the level at which bone health is compromised). The minimum distances from a hazardous to a relatively safe fluoride groundwater source (below 1.0 mg/L and 1.5 mg/L) were determined using geospatial analysis.

Results: Only 2.3% (142) of the total sample was found to be hazardous to skeletal health. Optimal fluoride sources were identified in close proximity to highly contaminated sources (>4.0 mg/L), some even within a walking distance of 500 meters.

Conclusions & Recommendations: The identification and elimination of maximally contaminated sources, possibly by dilution with widely available low fluoride sources in close proximity would be a more feasible and cost effective approach to ensure long term public health benefits.

Key words: *Groundwater, Skeletal fluorosis, Risk assessment, Geographic Information Systems (GIS)*

OP 106

Mass Drug Administration to minimize the risk of re-establishment of malaria in a setting highly receptive and of high importation risk in Sri Lanka.

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Background: Six years after malaria elimination in Sri Lanka, the first case of introduced Plasmodium vivax malaria was detected in the country in December 2018. It resulted from local transmission from an imported P, vivax malaria case among a group of migrant foreign workers in a factory in Monaragala, The high prevalence of An. culicifacies, the malaria vector at the focus warranted an extensive response to prevent further transmission. Mass drug administration (MDA), which is treating entire population irrespective of knowledge of existence of the disease was planned to all foreign workers from malaria endemic countries working in the factory to eliminate any parasite reservoir among the workers as a part of multidisciplinary interventions.

Aims: This paper describes how MDA was carried out during this outbreak.

Methods: With a recommendation for MDA for the aforesaid group of migrant workers by an expert committee, Standard Operating Procedures were prepared. Advocacy and awareness were performed for the factory management and migrant workers. Informed written consent was taken. G6PD RDT and Brewers test were performed to exclude G6PD deficiency. Pan-specific RDT, malaria microscopy and baseline heamoglobin testing were performed. Emergency preparedness to manage acute haemolysis was ensured at

the local hospital. Radical treatment with Chloroquine for 3 consecutive days followed by weight appropriate Primaquine for 14 days was administered to eligible foreign workers as Directly Observed Therapy under close supervision. Subjects were monitored for adverse effects till the completion of treatment and thereafter regularly screened for parasites.

Results: All eligible 31 workers gave written consent for MDA. Chloroquine was given to all, however, only 24 workers were given the full course of Primaquine. Seven workers, who were found to be G6PD deficient by any of the two tests performed, were not treated with Primaquine. No significant adverse effects were noted during or after the treatment. The treated group remained aparasitaemic for the 10 weeks of follow up.

Conclusions & Recommendations: MDA could be considered a safe and effective intervention for groups of eligible foreign workers in highly receptive foci in order to remove the potential parasite reservoir and to prevent re-establishment of malaria. A reliable quantitative test for G6PD is much needed for use in the field.

Key words: *Mass Drug Administration, G6PD, Primaquine, P.vivax, Chloroquine*

OP 107

Quality of life of primary caregivers having children awaiting cardiac surgery for congenital heart disease at Lady Ridgeway Hospital

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Background: Congenital heart disease (CHD) is the commonest type of birth defect with an estimated prevalence of around 8-12/1000 worldwide. Caregivers of children with CHDs are easy victims of low quality of life (QOL). It is important to recognize high risk caregivers for low QOL early so that necessary intervention could be planned.

Aims: To determine the quality of life of primary caregivers having children awaiting cardiac surgery for congenital heart disease at Lady Ridgeway Hospital, Colombo.

Methodos: This study was carried out as an clinic-based descriptive cross-sectional study in 422 caregivers, through convenient sampling methods over three months period. An interviewer administered questionnaire was utilized to obtain data on individual level and child factors pertaining to Health Related Quality of Life. Quality of life and its domains were assessed by WHOQOL-BREF questionnaire. Data extraction sheet was used to collect data from clinic records. Univariate analysis performed to detect association between selected factors and domains of Health related quality of life. P <0.05 was considered as statistical significance.

Results: Response rate was 99%. Majority (89.4%, n=377) of them were mothers. Out of caregivers 51 % (n=217) were in the 30 to 39 year age category and 75 % (n=317) were unemployed. Atrial Septal Defect was the commonest acyanotic heart disease and Tetralogy of Fallot was the commonest cyanotic heart disease found. Mean score of the quality of life was comparatively low in all domains except in social -relationship domain. Quality of life was negatively associated with increasing age of the caregivers (p<0.016), low educational level (p<0.024), unmarried, divorced and separated status (p<0.001), increasing number of children (p<0.003), low income level (p<0.02), type of the heart disease (cyanotic, p<0.001), and postponement of the surgery (p<0.001). Psychological domain is significantly associated with caregivers whose childrens' given surgery dates were early dates (p<0.001). Quality of life had no association with gender, religion, schooling, employment status and presence of co-morbidities (p>0.05).

Conclusions & Recommendations: Caregivers of children with congenital heart diseases are experiencing low quality of life. When planning long term care for these children, factors affecting low quality of life of caregivers also should be considered and services should be provided for better outcomes.

Key words: *Quality of life, Congenital heart disease, Lady Ridge way Hospital, Caregivers*

OP 108

Level of implementation of canteen guidelines in medical institutions in Anuradhapura District

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Background: The 'Guidelines for a healthy canteen in workplaces' was published by the Ministry of Health in 2013 to improve food choices & healthy eating of working community. Unhealthy food habits are considered a major risk factor for increasing non-communicable diseases. Health institutions and health staff are expected to be role models to the general community regarding health initiatives.

Aims: To determine the extent of implementation of guidelines in canteens at medical institutions in Anuradhapura District.

Methods: A descriptive cross sectional study was conducted on random working days in canteens providing all three main meals in medical institutions in Anuradhapura District in August and September 2018. Data were collected by the investigators by observing the canteens and interviewing the canteen owners according to guidelines using a pre-tested and validated data collection form. Scores were given according to a scoring system identifying 14 main components in the guidelines. Percentages were calculated for each component keeping 'best practise' level at 100%.

Results: Ten canteens fulfilled the inclusion criteria and all were included in the study. The median number of customers per canteen was 200 (IQR 100-625). The highest and lowest scores by canteens for overall implementation were 41.8% and 14.1% while the mean among all canteens was 29.2%. Two canteens restricted to medical staff / students had an overall implementation of 37.3% and 27.2%. Average percentages for healthy carbohydrate, fruit, snacks and oil options were 15.2%, 20.0%, 8.8% and 28.2% respectively. Availability of healthy dairy and use of standard coconut oil were 0.0%. Safe drinking water, hand washing with soap were available only in 6 and 4 canteens respectively. Implementation of food safety measures had only an overall score of 9.1 out of 28 (32.5%). None of the canteens had any posters/ guides regarding healthy eating and none of

the owners or workers were aware of the guidelines or had undergone training by any responsible authourity.

Conclusions & Recommendations: The extent of implementation of the canteen guidelines was highly unsatisfactory, asserting the need for active interventions to improve the quality of canteens and a mechanism to monitor them in order tohelp the working community to follow healthy eating habits.

Key words: *Implementation, Canteen, Guidelines, Medical institutions, Anuradhapura*

OP 109

A study of emotional, conduct and sexual health among Advanced Level students in Galle, Sri Lanka

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Background: Unhealthy behaviors related to emotional, conduct, sexual and antisocial issues among adolescents could create severe adverse consequences if not treated properly at an early stage.

Aims: To identify prevalence and to assess relationships between behavioral, emotional, conduct and sexual issues in Advanced Level students in Galle.

Methods: A descriptive cross sectional study was conducted on a sample of 396 Advanced Level students using a pre tested self-administered questionnaire. A convenient sample was selected. Data were analyzed by using SPSS 20 version. A translated Sinhalese version of the Strengths and Difficulties Questionnaire was used.

Results: Of the total, 35 students (8.8%) reported having used alcohol in the previous year. About 4% (n=16) of the participants were smokers. Scores of emotional health were higher among females compared to males (OR = 2.84, 95% CI: 2.19 - 6.23). Only 4% (n=16) of the students reported abnormal emotional experiences. About 4.3% (n=17) of students had reported having had some conduct behavioral problems in the past. There was no gender difference of the mean scores of conduct problem behavior. About 7.4% (n=14) of male students were sexually active, but only 1% (n=2) of female students reported the same behavior (OR =8.28, 95% CI: 1.85, 36.96). Of the participants, 64.9% males (n=122) and 51% (n=106) of females had experiences with sensitive personal relationships. About 87% (n=344) of the students reported receiving information on sexual issues from various sources. About 42.6% (n=80) of male students were on the opinion that sexual relationships are normal life events, but only 17.8% (n=37) female students thought so (OR = 2.88, 95% CI: 1.83 - 4.53).

Conclusion: Although adverse emotional, sexual and conduct behaviors in the target group seem to be less prevalent, education and health authorities need to pay attention to remedy the situation. Sustainable educational and behavioral interventions are needed to promote health of this target group.

Keywords: *Emotional, Conduct, Healthy Sexuality, Advanced Level students, Sri Lanka*

OP 110

Promotion of tobacco, alcohol and illicit drugs in Facebook in Sri Lanka: A qualitative study

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Background: Facebook is the most popular and visited social media website in Sri Lanka. Global evidence reveals that tobacco, alcohol and illicit drugs (TAIDs) are promoted via social media targeting youth, influencing their initiation and use. WHO Framework Convention on Tobacco Control (FCTC) article 13 provide guidance to reduce tobacco advertising, promotion and sponsorship effectively by banning all tobacco promoting methods. However, in Sri Lanka the ban only covers formal media. To date, an extensive analysis of Sri Lankan Facebook posts on TAIDs has not been carried out.

Aims: We aimed to describe the content of TAID related posts in Facebook and explore the techniques used in Facebook posts in Sinhala and Tamil languages to promote tobacco, alcohol and illicit drugs.

Methods: TAIDs related publicly shared Facebook posts were collected by using a snowball sampling method within a three-month period (November 2018 to January 2019). Content analysis was carried out using a pre tested data extraction sheet by two independent investigators, based on a deductive thematic analysis method. Extensive analysis was done on promotive Sinhala and Tamil posts to explore the promotive techniques used.

Results: A total of 763 posts were collected and 710 were analyzed after excluding duplicates. Of them, 83.8% (n= 595) were promotive [Alcohol 62% (n=369); Tobacco 23.9% (n= 142); Cannabis 17.3% (n=103); other 9.6% (n= 57)]. Commonest theme seen was humor 49.2% (n= 349). The other identified themes were sarcasm 38.4% (n= 273); political 14.2% (n = 101); radical/liberal 12.8% (n= 91); knowledge transferring 12.4% (n= 88) and gender 11.5% (n= 82). Product promotion 54.5% (n= 388) was commoner than brand promotion 9.9% (n=70).

In extensive analysis of Sinhala and Tamil language promotive posts (n=359), 64.3% (n= 231) promoted a product, 56.2% (n=202) normalized and 32 %(n=115) glamorized use of TAIDs. The commonest tools used for promotion were words 77.1% (n=277) and images 48.4% (n=175). Popular characters 8.3% (n=30) and celebrities 7.5% (n=27) were also used in TAIDs promotion.

Conclusions & Recommendations: TAIDs related Facebook posts were mostly promotive in nature and alcohol promotion was the commonest. Commonest themes used were humor, sarcasm and politics. Commonest strategies used were normalization and glamorization of use. Regulations to ban advertisement and promotion of TAIDs in Sri Lanka should be expanded to cover social media as recommended by the FCTC.

Key words: *Tobacco, Alcohol, Illicit drugs, Facebook, Sri Lanka*

OP 112

Morbidity pattern of geriatric population attending Urban Health and Training Centre, Jobra, Cuttack, India

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Background: Elderly persons contribute to 9-11% of total population. They are vulnerable to long term diseases of insidious onset such as cardiovascular illness, hypertension, diabetes mellitus, cancers, gastrointestinal, musculoskeletal and eye problems. Studies to assess the health status and morbidity pattern among them are few and far between.

Aims: To assess the health status and morbidity pattern of geriatric population attending the Out Patient Department of Urban Health and Training Centre, Jobra, Cuttack, Odisha, India.

Methods: A hospital based cross-sectional study was done among the elderly persons (aging 60 yrs and above) attending the Out Patient Department of Urban Health & Training Center, Jobra, India from 1st October to 31st October 2015. The total sample size was 124. All these people were examined clinically & necessary information was collected from them through a questionnaire. A pre-designed, pre-tested questionnaire was used for data collection, the first part of which contains socio-demographic variables. Another section of the questionnaire contained details of the general and systemic examination of the participants.

Results: Out of total 124 elderly participants, 60% were females. About 70% of the participants had nuclear family and 37% were belonging to upper lower class families. Spouse had died in 50% of the participants and around 67% were addicted to tobacco. Commonest morbidity observed among elderly people was musculoskeletal problem (64.5%) followed by gastrointestinal (48.3%), cataract (45%) with 27.4% operated cases, hypertension (43.5%), urinary incontinence (16.1%), diabetes mellitus (12.9%) and neurological problems (3.2%).

Conclusions & Recommendations: Elderly suffers from multiple morbidities attributing to their age which requires strengthening of geriatric health care services.

Key words: *Elderly people, Morbidities, Aging population, Geriatric population*

OP 113

The minimisation of alcohol harm to participants at mega events

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Background: Rhythm and Vines is a 3-day annual music festival held in Gisborne, New Zealand. Each day, nearly 20,000 people including 13,050 campers participate in this event and there were three bars that sold alcoholic beverages. These were open for business from 2.00pm to 5.00am. Campsites were alcohol free and patrons could only consume alcohol at designated premises. A special licence for sale and consumption of alcohol was issued and regulated by the Gisborne district licensing committee.

Aims: To regulate safe and responsible alcohol use at a three-day mega music festival.

Methods: The event was held at an isolated vinery for people aged 18 or over. Patrons were provided basic rules and regulations at the purchasing of tickets. Participants must wear wrist bands equipped with a computer chip with basic personal information relevant to the event. Patrons were prohibited to bring alcohol into the event and alcohol regulatory officers checked all vehicles and people for alcohol, illicit drugs and other substances at the entrance. During the time the bars were operating, two officers observed patrons' behaviour and talked to check their toxicity level. Officers issued yellow or red cards for patrons who were intoxicated or behaved in an inappropriate manner and they were not eligible to buy alcohol. Security officers patrolled around campsites to check security and alcohol related behaviours of patrons. Alcohol was sold only in cans and contained no more than 5% alcohol/volume and were limited to 4 units per transaction. The limit for wine was two units per transaction.

Results: Around a hundred people were presented at the St John ambulance in the campsite with alcohol intoxications, they were managed by hydrations. Only 89 patrons were issued yellow cards. Ten patrons were treated at the emergency department of the hospital for alcohol related problems including minor injuries. Alcohol related harm in this event was 1/3 of the previous year.

Conclusions & Recommendations: Thorough investigations of alcohol related issues of previous events and issuing of a special licence with detailed instructions for responsible sale and consumption, as well as independent monitoring of the procedures could minimize the alcohol related harm.

Key words: *Alcohol harm, Safe responsible use, Special licence*

OP 114

Trends of road traffic accidents and its shortcomings in achieving SDG targets in urban Jodhpur, India.

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Background: As estimated by WHO, road traffic accidents (RTAs) account for 1.3 million deaths and 20–50 million injuries worldwide. Road Traffic Injuries (RTIs) are the primary cause of death and permanent disability worldwide, particularly in Low Middle-Income countries (LMICs). Sustainable Development Goals (SDGs) target 3.6 seeks to reduce road traffic deaths and injuries by 50% by 2020.

Aims: To analyze the trend of RTA in urban Jodhpur, India and to compare the trends of RTA with SDG target 3.6

Methods: This study is an interim analysis of a cross-sectional study carried out at All India Institute of Medical Sciences, Jodhpur from 1st March to 30th June 2019 titled "Role of multi stakeholders in planning and implementation of Road Safety Initiatives in Jodhpur". Secondary data related to road traffic injury from 2016 to 2018 were collected from regional crime branch registries. Descriptive

analysis was done using EpiInfo software.

Results: Significant decrease in total crashes by 11.1% (n=67) was observed in 2018 compared with 2017 (trend seen opposite to 2016 – 2017). From 2017 to 2018, lower number of cases were recorded for killed/fatal injuries 15.25% (n=45), for grievous injury 27.3% (n=26), for minor injuries 11.8% (n=48). Collectively, 14.98% (total n=119) less victims were affected from RTIs. Fatal injuries trend for evening hours have changed from 15:00 – 18:00 PM (2016 and 2017) to 18:00 – 21:00 PM (2018) while no significant change was seen in morning hours.

Conclusions & Recommendations: Analysis suggested increasing burden trend till 2017 and a considerable decrease in 2018. Though this slight change in trend is valuable, but achieving SDG target 3.6 by 2020 (to halve the number of global deaths and injuries from RTAs) seems questionable and unachievable in suggested time frame. Policies require data driven amendments. There is a need of stringent strengthening, capacity building, safety engineering, research and technology enhancements.

Key words: *Road Traffic accidents, Goals, WHO, LMICs, SDG*

OP 115

Prevalence of smoking and its effect on treatment outcome among a sample of tuberculosis patients in a Northern State of India

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Background: Globally both Tuberculosis (TB) and smoking are major public health problems. The tobacco epidemic is one of the biggest public health threats of all times world has ever faced, killing more than 7 million people a year.

Aims: To estimate prevalence of smoking among tuberculosis patients and to determine its impact on treatment outcomes of newly diagnosed patients

Methods: This study was a Prospective Cohort Study carried out among 72 newly diagnosed tuberculosis patients registered at the various DOTS Centres of Shimla city which is the capital of Himachal Pradesh, a Northern State of India from 1st July 2017 to 30th June 2018. Patients were followed for six months of standardized Tuberculosis treatment. Smoking status was classified as per Global Adult Tobacco Survey (GATS). Treatment outcome was classified either as favourable (cured or treatment completed) or unfavourable (failure, lost to follow up or died). Data were collected and entered in Microsoft excel spread sheet, cleaned for errors and analysed using Epi Info software version 7.2.2.

Results: In our study sample 54.2% (n=72) of patients were suffering from Pulmonary Tuberculosis whereas 45.8% (n=72) patients were suffering from Extrapulmonary Tuberculosis. Prevalence of current smoking in our study sample came out to be 9.7% (95% CI: 4.0-19.0%). 27.8 % (n=72) of patients were past smokers whereas majority (62.5%) were non-smokers. In our univariate analyses, the risk of unfavourable treatment outcomes was higher among smokers (RR: 1.13; 95% CI: 0.98–1.29, p=0.049), Smokeless tobacco users (RR: 1.31; 95% CI: 0.88–1.96, p=0.031) and those with history of harmful alcohol use (RR: 1.43; 95% CI: 0.95–2.14, p=0.002). Other baseline sociodemographic and clinical factors did not show statistically significant influence on treatment outcome

Conclusions & Recommendations: Smoking and smokeless tobacco cessation programmes need to be targeted at Tuberculosis patients, both by clinicians and by health workers involved in providing treatment of tuberculosis.

Key Words: *Tuberculosis, Smoking, Cohort study, Smokeless tobacco*

OP 116

Risk behaviours for sexually transmitted diseases and blood borne viral infections among male illicit drug users in selected rehabilitation centres in Sri Lanka

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Background: Illicit drug users are vulnerable for sexually transmitted diseases (STD) and blood-borne infections due to their risk behaviours associated with drug use.

Aims: To assess the risk behaviours for sexually transmitted diseases and blood borne viral infections among male illicit drug users in selected rehabilitation centres in Sri Lanka

Methods: A cross-sectional study was conducted in a consecutive sample of 431 male illicit drug users in five selected rehabilitation centres in four different districts: Galle, Colombo, Gampaha and Kandy in Sri Lanka. An interviewer assisted, self-administered questionnaire was used to assess risk behaviours for sexually transmitted diseases and blood borne viral infections. Data were analysed using SPSS software. Ethical approval was obtained from Ethical Review Committee, Faculty of Medicine, University of Ruhuna.

Results: Injecting drug practices was reported by 23.6% (n=102) of the drug users at least once in their lifetime, while 5.8% (n=25) had routine injecting drug practices. Among intravenous drug users 29.4% (n=30) had shared needles, while 31.3% (n=32) had reused needles. Majority (n= 252, 58.5%) of the drug users had multiple sexual partners and nearly 20% (n=85) had engaged in sexual activities with commercial sex workers. Homosexual behaviour was reported among 13.9% (n=60) of drug users. Body tattoos (n=263, 61.0%) and body piercing (n=216, 50.1%) were other common risk exposures. Forty-five per cent of the drug users (n=194) had been investigated for STD and blood-borne infections at least once in their lifetime. However, only few drug users were identified with Hepatitis B (n=1, 0.2%) or Syphilis (n=2, 0.4%,) and none with HIV, Hepatitis C or other sexually transmitted diseases. Presence of high risk behaviours for STD and blood-borne infections was significantly associated with urban residence (p<0.05) and older age (p<0.05) but not with poly drug use (p=0.356).

Conclusions & Recommendations: Risk behaviours for STD and blood-borne infections are common among male illicit drug users. Implementation of proper preventive and rehabilitation programs would be important to prevent transmission of these diseases among illicit drug users.

Key words: *Risk behaviours, Sexually transmitted diseases, blood-borne infections, Male illicit drug users*

OP 117

Coping strategies practiced by bus drivers to overcome occupational stress in Maharagama Municipal Council area

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Background: Bus drivers are a group of workers who face every day stress merely due to their job. Handling a vehicle with full of lives inside and outside his arena, a bus driver is overwhelmed with occupational stress. There are some methods people use to handle their stressful events called coping which is divided into three broad categories namely problem-focused, emotional focused and appraisal focused. Problem focused strategy targets the causes of the stress and tackling the problem that caused stress. It is basically solution-oriented actions. Emotional focused method consists of both emotional harmless (to remove the negative emotional responses associated with stress in a harmless manner) and emotional harmful (to remove negative emotional response aroused by stress, in a harmful manner) responses. Appraisal focused comprises the reappraising and challenging one's assumptions.

Aims: To describe coping strategies for occupational stress among bus drivers in the Maharagama Municipal Council area

Methods: This descriptive cross sectional study took place in Maharagama Municipal council area among 402 bus drivers of government (SLTB) and private sector commencing journey from Maharagama Municipal Council area. It was carried out during August and September 2014. Subjects listed in registries of SLTB depot, Maharagama and Road Passenger Transport Authority, Western province were chosen by convenient sampling technique. Instrument was a pre-tested check list with 17 statements and each had four responses namely, strongly disagree, disagree, agree and strongly agree. Data was presented as percentages. Associations were tested by Chi Square test with a significant value at the level of 0.05 and 95% Confidence Interval were calculated.

Results: Drivers practiced all these methods interchangeably. Problem focused was used by 99% (n=398). Appraisal focused was practiced by 98% (n= 394). Emotional harmless was adhered by almost all subjects 100% (n=402) and emotional harmful incorporated by 50.4% (n=203). Tobacco smoking, smokeless tobacco usage and alcohol consumption were the highest practiced emotional harmful methods. Emotional harmful coping was significantly associated for job stress among drivers (P< 0.001).

Conclusions & Recommendations: Most popularly practiced coping strategy was emotional harmless strategy, however, some practice emotional harmful methods too. Health promotion programmes to achieve good coping mechanisms, life skills among drivers should be implemented by relevant authorities.

Key words: *Bus drivers, Occupational stress, Coping strategies*

OP 118

Prevalence of nomophobia and its effect on psychological well-being in smartphone using undergraduates of a selected medical faculty in Sri Lanka

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Background: Nomophobia is the fear or anxiety caused by being out of contact with a mobile phone or its services. Medical undergraduates are more prone to develop nomophobia because of the time constraining schedule and high dependency on smartphones.

Aims: To assess the usage patterns of smartphones, prevalence of nomophobia and its effects on some aspects of psychological well- being in smartphone using undergraduates of a selected medical faculty in Sri Lanka.

Methods: A cross-sectional analytical study was carried out among 150 medical undergraduates of Faculty of Medicine, Colombo selected through convenient sampling. Ethical approval was obtained by the Ethics Review Committee of Faculty of Medicine, University of Colombo. A self-administered questionnaire including the validated nomophobia questionnaire was used and factors of psychological well-being included in the questionnaire were based on previous research findings. The significance of each socio-demographic and smartphone usage parameter for development of nomophobia and its effect on psychological well-being was assessed via the Chi-Square test, taking the significance level as p<0.05.

Results: Main reason for acquiring a smartphone was to use in case of emergency (26.1%) and main use was identified as voice calls (34.6%). Majority accessed internet for social media (38%) and checked internet during academic activities mainly to look up study material (13.4%). The prevalence of nomophobia in the study population was seen as 100.0% with 28.2% having mild, 62.0% moderate and remaining 9.9% having severe nomophobia. People with higher degree of nomophobia were more frequent internet users (p=0.018), checked smartphone during academic activities (p=0.028), kept their phones near the bed when sleeping (p=0.045), used it while charging (p=0.013), spent more time with the smartphone than with family and friends (p=0.001) and was depended on it to maintain their social identity (p=0.020). Higher degree of nomophobia

was not associated with decreased sleep quality (p=0.035), waking up due to phantom vibrations (p =0.983), difficulty concentrating on studies (p =0.801), irritability & less energetic (p = 0.076), diminished trans-active memory (p= 0.787), difficulty socializing directly with people (p=0.373), lonely and uneasy at public places without a smart phone (p=0.090). Majority of the students have identified smartphones as a hindrance to studies (80.3%) and have attempted to reduce usage (65.5%) but have failed in doing so (65.6%).

Conclusions: The study population had a high prevalence of nomophobia, with many socio-demographic and smartphone usage related factors leading to its development. Nomophobia had affected the psychological well-being and academic prowess of students.

Key Words: *Nomophobia, Medical students, Psychological wellbeing.*

OP 119

Prevalence and associated factors of depression and its healthseeking behaviour among end stage renal disease patients on hemodialysis in government hospitals in Kurunegala District, Sri Lanka

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Background: Depression is the main psychological problem among end stage renal disease (ESRD) patients on hemodialysis, which adversely affect the medical outcome.

Aims: The objective of this study was to determine the prevalence and associated factors of depression and the health seeking behaviour among patients on regular hemodialysis in government hospitals in Kurunegala District.

Methods: Population of 163 patients at ESRD on hemodialysis participated in this descriptive cross-sectional study conducted in three hospitals in Kurunegala district. An Interviewer administered questionnaire was used to collect socio demographic, disease related and dialysis service provision related information. Patient satisfaction was measured using an instrument adopted from the literature and the score ranged from 1-4, with higher scores indicating higher satisfaction. Depression and symptom burden were assessed by Centre for Epidemiologic Studies Depression Scale and Chronic Kidney Disease Symptom Index – Sri Lanka instruments, respectively. A CESD score above 16, was considered positive for depression. CKDSI – Sri Lanka score ranged from 0-125 with higher sores indicating higher symptom burden.

Results: Among 91.6% (n = 163) of the study population who responded, the majority were males (71.8%, n= 117) and were between 50–69 years (67.5%, n= 110) of age. The median duration since diagnosis of ESRD and dialysis were 1.3 (IQR 0.7–2.4) years and 0.9 (IQR 0.5–1.8) years respectively. Nearly three quarters (69.3%, n=113; 95% CI 62.1–76.4) were screened positive for depression. The mean patient satisfaction score was 2.82 (SD 0.28) while the mean and the median CKDSI – Sri Lanka score were 48.8 and 46.0 respectively. Multiple logistic regression analysis revealed higher CKDSI – Sri Lanka score (aOR

1.08) and lower patient satisfaction score (aOR 0.14) to be significantly (p<0.05) associated with being depressed. Majority were willing to reveal psychological problems to family members (83.4%, n=136) and were happy to be screened for psychological status (90.2%, n=147) and preferred western medical treatment for mental health problems at the same CKD clinic (44.8%, n= 73). Only 4.3% (n=7) had ever seen by a psychiatrist.

Conclusions & Recommendations: The prevalence of depression was found to be high among the population. It's recommended to provide psychological screening for patients on hemodialysis at identified points in clinical course and provide appropriate management as far as possible at the same CKD clinic.

Key words: *CKD, ESRD, Hemodialysis, Depression, Health-seeking-behaviour*

OP 120

Relationship between gaming addiction and deviant behavior in grade 10 students in Galle Educational Zone

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Background: Video Games is a form of entertainment. It refers not only to games played on a personal computer, but also to games run by a console or arcade machines. Game addiction has become a public health issue and it causes many adverse health effects to the user

Aims: To identify relationships between the gaming addiction and deviant behaviors in adolescent school children in Galle district

Methods: A cross sectional study design was used. The sample comprised school going 400 children. Pre tested, structured, self-administered questionnaire was used to collect data. Gaming addiction and deviant behavior were assessed using SPSS 22nd version. Ethical clearance was obtained from the Ethics Review Committee, Faculty of Allied Health Sciences, University of Ruhuna, Galle.

Results: Of the total, 80.8% (n=323) were having experience in playing video games. Action (n=83, 20.8%) and combat (n=64, 16.0%) games were popular. Only 1.0% (n=4) of the participants were engaged in playing educational games. Majority of the participants (n=232, 58%) had used mobile as their playing instrument. Among addicted 42 students 30 were male and 12 were female. Combat games (28.8%) were more prevalent among males (n=198) and action (22.3%) and puzzle games (18.8%) were more prevalent among females (n=202). Results showed that gaming addiction is positively associated with conduct (p=0.00) and hyperactivity (p=0.01) behaviours of the participants. Among addicted students 50% (n=21) were having abnormal behaviors.

Conclusions & Recommendations: Male students were more prone to get addicted to video gaming. Overall results indicate that there is a significant relationship between the gaming addiction and deviant behaviors. Therefore, it is important to promote other healthy practices such as outdoor activities, exercises, afterschool activities and community activities to distract students from gaming addiction.

Key words: *Gaming addiction, Students, Deviant behavior*

OP 121

Validation of the Sinhala version of Young's internet addiction test for Sri Lankan adults

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Background: Internet users have doubled from 15% of the population in year 2011 to 29.3% in year 2016 in Sri Lanka. Despite its importance, internet addiction has remained an unexplored field in Sri Lanka, mainly due to the absence of a valid tool to measure.

Aims: To assess the validity and reliability of Sinhala version of Young's Internet Addiction Test among working adults aged 18-34 years

Methods: A community based descriptive cross-sectional study was carried out among 320 adults aged 18-34 years living in the district of Gampaha. Young's Internet Addiction Test (IAT), time spent on internet per day, monthly expenditure for internet, basic demographic and socioeconomic factors were collected using a self-administered questionnaire. A multi stage cluster sampling method was adopted for data collection. Exploratory factor analysis (EFA) and Confirmatory factors analysis (CFA) were used to assess the factor structure. Construct validity was assessed by correlation of IAT score with time spent on internet and monthly expenditure for internet, using Pearson correlation coefficient. Cronbach's alpha coefficient and test-retest reliability with two weeks interval were used for reliability assessment.

Results: Sample of 320 randomly divided into two groups of 160 each for EFA and CFA. Average time spent for internet per day and monthly expenditure for internet were moderately correlated ($r = 0.42$ and $r = 0.45$) with the IAT score. EFA resulted with 18 items and obtained a three-factor model: fantasy and compulsive use, performance in life and time management. Three factor model explained 62.9% of the total variance with Eigen values ranging from 1.17 to 8.73. Model fit indices of IAT (RMSEA=0.07, CFI=0.97, NNFI=0.96, SRMR=0.062, GFI=0.86) showed adequate evidence of model fit. Cronbach's alpha coefficients of the three factors were 0.91, 0.79 and 0.86. Test retest reliability were 0.87, 0.89 and 0.82 for three factors.

Conclusions & Recommendations: Sinhala version of Young's Internet Addiction Test is a valid and reliable tool to identify problematic internet users among working adults aged 18-34 years living in the district of Gampaha

Key words: *Young's Internet Addiction Test, Exploratory factor analysis, Confirmatory factor analysis, Sri Lanka*

OP 122

Prevalence and associations of severe fear of childbirth among pregnant women presented to specialized antenatal clinics in Badulla district: A cross sectional descriptive study

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Background: Fear of Childbirth (FOC) or tokophobia is a common problem affecting women's health and wellbeing and a common reason for requesting caesarean section worldwide. Identification of FOC will be helpful in expanding the services and quality improvement in maternal healthcare.

Aims: To identify the prevalence and determinants for FOC and to describe association between the preferred method of delivery in relation to FOC among pregnant women presented to specialized antenatal clinics in Badulla district

Methods: A cross sectional descriptive study was carried out to evaluate 692 pregnant women. This was done in 4 specialized clinics of the Badulla district which cater the pregnant women in all 16 MOH areas. Proportionate to clinic attendance, sampling was done since sampling frame is not available for the above population. Pre-tested interviewer administered questionnaire and two validated self-administered questionnaires (WDEQ-A and EPDS) were used to collect data. W-DEQ score of ≥ 85 was considered as severe /intense fear status.

Results: Response rate was 95%. Among the study participants 13.2 % (CI10.3-15.6) of pregnant women exhibited severe FOC for the current pregnancy and more prevalent in nulliparous (17.7%) than multi (10.6%). Elements associated with family, partner, and factors related to social capital and related micro-environmental factors showed highly significant statistical associations (p<0.001 in all cases). Significant medical history (p=0.001), surgical conditions (p=0.000) antenatal (p=0.000) and postnatal complications (p=0.000) were also significant. Antenatal depression (p=0.000) and preferred elective caesarean section birth (p=0.000) were other significant associations. Among the women who had FOC 23.3% (n= 30) preferred a caesarean delivery.

Conclusions & Recommendations: The results draw attention to the need for early detection and treatment for FOC as well as improvement in maternal mental health services beyond the conventional medical care. Social and family factors are highly related with FOC and the current social risk identification by PHM and healthcare workers should be strengthened. Follow up studies are needed to see whether FOC is associated with high LSCS and adverse pregnancy outcome.

Key words: *Fear of childbirth, Tokophobia, Prevalence, WDEQ-A*

OP 123

Cross-cultural adaptation and validation of tools to assess dementia specific quality of life among people with dementia in Sri Lanka

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Background: Dementia has become a public health priority along with population ageing worldwide. Owing to its chronic progressive nature in the absence of a cure, maintaining the best possible quality of life (QOL) have become the desired outcome for people with dementia. In the absence of valid tools to measure QOL, its current status is not known in the Sri Lankan setting.

Aims: To perform a cross-cultural adaptation and validation of Dementia Specific Quality of Life (DEMQOL) and DEMQOL-proxy tools in Sri Lankan setting.

Methods: The 28-item DEMQOL and 31-item DEMQOL-proxy tools which were originally developed and validated in United Kingdom were initially translated, culturally adapted using modified Dephi process with a panel of experts, and tested for judgmental validity. Construct validity was assessed by using multi-trait scaling analysis and confirmatory factor analysis (CFA) on data obtained from 100 dyads of mild to moderate dementia patients and their primary caregivers attending state hospital psychiatry clinics in Gampaha district. The structure of DEMQOL and DEMQOL-proxy was evaluated based on a variety of fit indices. Reliability was assessed using test-retest method and internal consistency.

Results: All the items showed good psychometric properties in judgmental validity, item-convergent and item discriminant validity. In CFA, using robust maximum likelihood method the original four-factor model emerged with DEMQOL validation data, whereas a five-factor model was best fitted with DEMQOL-proxy validation data. Reliability of DEMQOL (Cronbach's alpha=0.87; correlation coefficient=0.864) and DEMQOL-proxy (Cronbach's alpha=0.874; correlation coefficient=0.834) was satisfactory.

Conclusions & Recommendations: Sinhala versions of the DEMQOL and DEMQOL-proxy scales are valid and reliable in assessing the QOL of dementia patients of mild-moderate severity in Sri Lanka. It is recommended to be used by health care professionals who provide care for dementia patients. This would enable them to understand the current level of QOL as well as give direction towards improvement.

Key words: *QOL, Dementia, Validation, Cultural adaptation*

OP 124

Risk factors for behaviour problems among preschool children in Colombo District, Sri Lanka

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Background: Preschool age is the earliest point in child's life where behaviour problems and related risk factors can be easily identified and intervened to reduce lifetime negative consequences.

Aims: This study was carried out to determine risk factors for behaviour problems among preschool children.

Method: Case-control study was conducted among 169 children with behavior problems and 169 controls. 3-5 year old children attending preschools for more than six months in Medical Officer's Health (MOH) area of Kaduwela were included in the study. If parents or teachers have not cared for child continuously for last six months and are not conversant in Sinhalese or English then the child was excluded. Children were screened using Strength and Difficulties Questionnaires: Parents'version (SDQ-P) and Teachers' version (SDQ-T) to detect whether they have behavioural problems. A 3-5 year old child who had scored more than the cutoff value for both the SDQ-P and SDQ-T was identified as a case. Total of 955 children were screened to identify calculated sample size of 169 cases. Children who scored less than cutoff values for both questionnaires were taken as controls. Pre-tested interviewer administered questionnaire was used to collect data on risk factors from parents. Children who were identified as having behavioural problems were referred to psychiatric clinic at Lady Ridgeway Hospital for further management. Risk factors for behavioural problems were determined by bivariate as well as multivariate analysis.

Results: One out of five children (n=169, 17.7%) attending preschools expressed behavioural problems. Nearly half the study population (n=529, 55.4%) was in the age group of 3-4 years and half the study population (n=493, 51.6%) consisted of females. The majority of the children (n=726, 94.8%) live in rural areas. More urban children reported to have behavioural problem (33.1%) by both parent and teacher compared to other three groups (reported by either SDQ-P or SDQ-T questionnaire or not reported). Logistic regression analysis revealed, being a male (adjusted OR=12.80, CI=4.35-37.63, p<0.001), having antenatal complications (adjusted OR=5.96, CI=1.87-19.02, p=0.003), low birth weight (adjusted OR=3.07, CI=1.26-7.49, p=0.014) and postnatal complications (adjusted OR=4.56 , 95% CI=1.61-12.90, p=0.004) as biological risk factors and low nutritional status (adjusted OR=4.12, 95%CI=1.22-13.99, p=0.023) as a childhood related risk factor for problem behaviour. Having low monthly income <Rs.10,000 (adjusted OR=50.71,95% CI=7.82-328.82, p<0.001) was the strongest risk factor found in multivariate analysis. Frequent consumption of alcohol by father (adjusted OR=1.76, 95%CI=1.04-2.48, p<0.05), parental arguments (adjusted OR=2.59, 95%CI=1.25-5.36, p<0.05), having low maternal educational level (adjusted OR=4.49, 95%CI=2.01-10.03, p<0.001) were identified as parental risk factors while maternal employment status inside or outside the house on a part time basis (adjusted OR= 0.01, 95%CI=0.00-0.10, p<0.001) and child cared during day time by mother (adjusted OR=0.03, 95%CI=0.00-0.25, p=0.001) was identified as significant protective factors for behaviour problems.

Conclusions & Recommendations: Risk factors that children exposed during their life-course have significant associations with behaviour problems among preschool children. A comprehensive national study should be undertaken to determine prevalence of behavioural problems among preschool children in Sri Lanka. Use of existing public health system to identify risk factors and to improve community based services by inter-sectoral coordination with non-health and non-government sectors is recommended to minimize modifiable risk factors identified by the study.

Key words: *Behavioural problems, Pre-school, Children, Risk factors*

OP 125

Knowledge, attitudes and practices of Public Health Midwives on their role in adolescent and youth friendly health services in Gampaha district

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Background: Adolescents account for 3.3% of the Sri Lankan population of 20.4 million. Behaviours acquired in adolescence such as use of tobacco, alcohol and other drugs, eating habits, gender relations, sexual conduct, and dealing with conflicts and risks will last for life and affect even next generation.

Aims: To assess the Public Health Midwives'(PHMs') knowledge, attitude and practices on their role in provision of adolescent and youth friendly health services(AYFHS) in Gampaha District.

Methods: A descriptive cross-sectional study was conducted among all the PHMs in Gampaha District using a self-administered questionnaire to assess PHMs' knowledge, attitudes and practices on their role on AYFHS in 2018-2019. Data collection was conducted by a co-investigator after obtaining informed written consent. Data entry and analysis were conducted using SPSS 21. Scoring system was developed for knowledge, attitudes and practices and expressed with mean and standard deviations or median and quartiles depending on the distribution. Selected variables were presented using frequency distributions.

Results: Out of 483, 433(90%) responded to the questionnaire. Median age of the sample was 42 years with interquartile range (IQR) of 36-51 years. A majority (n=432, 99.8%) were Sinhalese and 387 (88%) had educational qualification of GCE(O/L) and above. Only 393 (91.6%) knew the adolescent age range. A majority (n=339, 78.5%) identified that "PHM has a role to play in AYFHS". Percentages identifying the PHMS' role in registering adolescents, identifying risky adolescents during home visits, providing details of AYFHS clinic, referring needy adolescents to AYFHS clinic, and following risky adolescents in the field were 94% (n=406), 93.8% (n=405), 76.9% (n=332), 73.6% (n=318), 76.9% (n=332) and 76.6% (n=331) respectively. PHMs having positive attitudes regarding their contribution on prevention of adolescent health issues, providing AYFHS services in the field were 300 (n=86.2%) and 351 (97.3%) respectively. Median percentage scores and IQRs on knowledge, attitude and practices on PHMs' role were 71.4 (52.5-98.9), 40 (25-55) and 47.6 (35.6-61.9) respectively. PHMs having satisfactory level of knowledge, attitude and practices over

75% regarding their role in providing AYFHS were 46.7%, 12% and 9.7% respectively.

Conclusions & Recommendations: Study reflects that PHMs' perception of their role in AYFHS is unsatisfactory and recommends implementation of interventions targeting improvement of their attitudes and practices on AYFHS.

Key words: *Adolescent, Adolescent friendly health services, Public health midwives*

OP 126

Prevalence of smart phone use and addiction, and its relationship with selected unhealthy lifestyles among youth trainees of National Youth Services Council in Colombo District

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Background: In spite of its usefulness, smart phone addiction would affect several health outcomes among youth such as physical inactivity, skipping meals, poor sleep habits, alcohol consumption, smoking and using other addictive substances.

Aims: To assess the prevalence of smart phone use, addiction and its relationship with selected unhealthy lifestyles among youth trainees of National Youth Services Council(NYSC) in Colombo district.

Methods: Descriptive cross-sectional study was conducted among 427 trainees selected from four centers of NYSCColombo district randomly, in 2018 using self-administered questionnaire. SPSS-21 was used for statistical analysis. Scores for addiction were presented with mean and SD or median and IQR depending on the distribution. Odds ratio and Chi Square test were used to assess the relationship of smart phone use and smart phone addiction with the selected unhealthy lifestyles.

Results: There were 236 (55.3%) males and 191 (44.7%) females. Response rate was 100%. Out of them 421 (99.1%) were using mobile phones and 383 (91%) had smart phones. Prevalence of smart phone addiction was 31.2% (n=117). Majority (n=241; 57.8%) did not get recommended level of physical activity in the previous week. Those who had taken carbonated drinks, precooked food and salted food ≥3 times per week were 151 (35.4%),72 (16.9%) and 64 (15.%) respectively. Eighty-six trainees (20.1%) had ever used alcohol and 23 (27.1%) had taken alcohol within previous week. Fifty one (12%) of trainees had ever smoked and 23 (45.1%) had smoked within previous week. Twenty-five (5.9%) had ever used addictive substances. Majority (n=301; 71.8%) did not have sleep of 8-hours at night. Smart phone use was significantly associated with using mobile

phones while having meals, high screen time, and using mobile phone before sleep (p<.05). Smart phone addiction was significantly associated with inadequate physical activities, consumption of carbonated drinks, pre-cooked and salted food, using mobile phone while having meals, ever used alcohol, current use of addictive substances and using mobile phones before sleeping (p<0.05).

Conclusions & Recommendations: Smart phone addiction was found to be a considerable issue among trainees of NYSC in Colombo district with its association with physical inactivity, unhealthy diets and substance use. Study recommends taking necessary interventions for prevention smart phone addiction and to establish healthy lifestyles.

Key words: *Smart phone addiction, Youth, Unhealthy life styles, Sleep*

OP 127

Emotional and behavioural status and associated factors among 11-16 year old inmates of Children's Homes in the Gampaha Probationary Division

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Background: Emotional and behavioral conditions are common among inmates living in Children's Homes due to lack of affection, care and protection received by counterparts living with parents, making them more vulnerable for the above disorders.

Aims: To describe emotional and behavioral status (E&BS) and the associated factors among 11-16 year inmates of Children's Homes in the Gampaha Probationary Division.

Methods: A descriptive cross sectional study was conducted. Minimal sample size calculated was 294. Inclusion criteria was being Sinhala language conversant. All eligible inmates of 14 Children's Homes in Gampaha Probationary Division were recruited. Study instruments comprised, self-rated Strengths and Difficulties Questionnaire (SDQ), interviewer administered questionnaire and a checklist to extract relevant data from the records. Logistic regression analysis was carried out to identify associated factors for emotional and behavioural status controlling for the effects of confounding factors. A probability of less than 0.05 was selected as the significant level. The results were expressed as odds ratios (OR) and 95% confidence intervals (95% CI).

Results: Response rate was 100% (n=279). The prevalence of abnormal emotional and behavioral status was 26.2% (95% CI: 21.1-31.7). Conduct problems were the highest (28.7%; 95% CI: 23.4-34.4) and prosocial problems were the lowest (3.6%; 95% CI: 1.7-6.5). Female sex (OR= 2.4; 95% CI: 1.19 -4.84, p =0.014), living in Children's Home for more than six years (OR= 2.9; 95% CI: 1.45 – 6.02, p= 0.003), having less than 10 friends (OR=2.23; 95% CI: 1.17 -4.23, p=015) and keeping problems to themselves (OR = 10.13; 95% CI: 3.92 – 26.18, p<0.001) were significantly associated with having abnormal E&BS.

Conclusions & Recommendations: Observed prevalence is higher than figures from general population which was 18.9%. Except "sex", all other associated factors were modifiable. Recommend early screening and establishing counseling services. Future research should focus on assessing all three versions of SDQ and qualitative research to identify root causes of the related problems.

Key words: *Emotional and Behavioural Status, Strengths and Difficulties Questionnaire, Inmates of Children's Homes*

OP128

Causes and consequences of epidemiological and lifestyle factors on sleep pattern in adolescents: A community based study

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Background: Sleep is a naturally recurring state characterized by reduced or absent consciousness. We spend almost a third of our life sleeping with 8-10 hours of sleep per day. Good quality sleep is essential for good health and well-being. However, lifestyle and environmental factors are increasingly causing difficulties in sleeping thereby hampering the physical, behavioral and psychosocial development. Adolescent sleep deserves special attention because of its potential impact on academic performance. There is no reliable statistical data available about sleep disorders in India.

Aims: To describe the sleep pattern of adolescents and its association with various socio-demographic and lifestyle factors.

Methods: The present study was a cross sectional study conducted in Government schools of urban areas of Ludhiana, India. The adolescents in the age of 10-19 years comprised the sample of study. A total of 1200 adolescentswere conveniently selected from14 schools. The variables - age, gender, type of family, type of house, dietary habits, BMI, Sleep latency and quality of sleep were noted. The self-reported adolescent sleep habit questionnaire was used to study the sleep pattern. The data were statistically analyzed by using SPSS 20.0. Mean and standard deviation were computed. Chi square test and Fisher's Z test were applied.

Results: Out of 1200 subjects, 65.5% were early aged (10-15 years) and 34.5 late aged (16-19) adolescents. There were 55.8% and 60.1% males among early and late age adolescents. There were 9.5% stunted adolescents and 26% overweight/obese. The mean sleep duration (hours) among early and late age adolescents was 7.17±1.88 and 6.43±1.59 and 8.98±2.39 and 8.82±2.47 on weekdays and weekends, respectively. Sleep latency was <20 minutes and >60 minutes among 53.3% and 7.9% and 26.8% and 13.3% early and late aged adolescents, respectively and further it was significantly(p=0.001) higher among girls. The quality of sleep was significantly associated (p=0.001) with age, gender, co-sleeping habit and use of computer/TV/mobile before 1 hour of sleep. 22.7% adolescents had habits of taking food/snack and 4.8% used sleep related medicine before sleeping. The common problems observed were headache (8.5%); constipation (2.1%); irregular food habits (10.5%); palpitation (3.5%) and leg pain (7.2%).

Conclusion: Sleep deprivation and poor quality of sleep was found to be associated with age, gender, use of internet/computer/mobile.

Key words: *Sleep, Adolescents*

OP 129

Correlates of Primary Headache among School Going Adolescents in Colombo District

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Background: Headache is the most frequent somatic symptom of adolescents and the commonest primary headache types are Migraine and Tension Type headaches (TTH). Correlates of childhood headaches have not been assessed in Sri Lanka.

Aims: To determine correlates of migraine and/or TTH among schooling adolescents aged 13 -15 years in the district of Colombo.

Methods: This cross-sectional analytical study compared 237 adolescents with migraine and/or Tension Type Headache and 230 without headache. Presence or absence of Migraine and/or TTH was determined using the validated screening tool Headache Attributed Restriction, Disability, Social, Handicap, and Impaired Participation (HARDSHIP) questionnaire which was applied as a self-administered questionnaire to 901 students selected through multistage cluster sampling. Information related to correlates were obtained using a self-administered questionnaire for adolescents and interviewer-administered questionnaire for parents. Anthropometry, visual acuity and clinical examination were performed. Bivariate analysis followed by logistic regression for multivariate analysis determined the correlates.

Results: Physical exercise less than 60min/day in week day (Adjusted OR-3.3; 95% CI: 1.9-5.7), Playing video/computer games more than an hour a day in week end (Adjusted OR -5.3; 95% CI: 2.9-9.9), Obesity or overweight (Adjusted OR -79.9; 95% CI: 9.8-649.4) were among significant physical health related correlates of migraine/and or TTH. Having a subscale score of moderate or above in depression, stress and anxiety subscales of Depression Anxiety Stress Scale (DASS 21) (Adjusted OR-5(1.5-16.1), 4.6 (1.7-11.9) and 2.6 (1.3-4.9), and abnormal Strengths and Difficulties Questionnaire (SDQ) conduct score (Adjusted OR-7.3; 95% CI: 3.1-10.0) were significantly correlated with headaches. Ethnicity other than Sinhalese (Adjusted OR-6.0; 95% CI: 2.4 -15.2), mode of delivery other than normal vaginal delivery (Adjusted OR-2.6; 95% CI: 1.5-4.5) and history of motion sickness (Adjusted OR-2.4; 95% CI: 1.4 - 4.1) were among significant correlates which are not modifiable.

Conclusions & Recommendations : Modifiable risk factors reported through this study will inform how the school children's headache problems could be resolved through life style approaches which can be addressed through the existing school health programme.

Key words: *Primary Headache, School Going Adolescents*

OP 130

Sexual and reproductive health of Sri Lankan youth: Their knowledge, attitudes and current sexual practices

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Background: Young people are more prone to risky behavior due to lack of neuro development leading to significant implications for sexual and reproductive health. Evidence gained from this study among youth would inform the health as well as the other sectors where youth a part, to improve service provision on sexual and reproductive health to youth and to support ending AIDS in Sri Lanka by 2025.

Aims: To describe the level of knowledge and attitudes regarding sexual and reproductive health among Sri Lankan youth.

Methods: A descriptive cross sectional study was conducted among all 25 districts in Sri Lanka. A sample of 3042 youth aged between 18 – 24 years, newly recruited to youth training institutes island wide were included using one stage cluster sampling method. A self-administered questionnaire was used for data collection. Data was analyzed using SPSS version 22. Ethical clearance was obtained from the ethics review committee, faculty of Medicine, University of Kelaniya.

Results: Majority of the participants were male (61.6%), between 18 – 20 years (79%) and nearly one third have been educated up to G.C.E. ordinary level. Only 10.2% participants had universal knowledge regarding HIV infection. More than half s (59.0%) had satisfactory or excellent knowledge on symptoms of Sexual Transmitted Infections (STI) and a similar proportion had satisfactory knowledge on HIV. Majority had negative attitude regarding STI and HIV. One fourth (26.2%) have ever had sex. Majority (55.9%) have always used condoms with commercial sex worker while similar proportion has never used a condom with other partners. There was no significant association between level of knowledge on HIV and usage of condoms with permanent or casual partner (P>0.05). Among the participants, 4.5% of males and 8.7% of females have experienced violence. The most prominent type of violence was verbal (65.3%) and 20% have been experienced from an immediate family member.

Conclusions & Recommendations: Although l knowledge was satisfactory among the study group practices especially of correct and consistent condom use need to be promoted among the youth to avoid infections and unintended pregnancies. Education to improve personal tolerance skill of anger management need to be improved from young ages to reduce verbal and physical abuse in families.

Key words: *Sexual and reproductive health, Youth*

OP 131

"Teaching-life-through-schools": a project to enhance inter-sectoral collaboration as an intervention to improve adolescent health in schools of Kalutara Educational Division, Sri Lanka

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Background: School health promotion is vital for ensuring comprehensive adolescent healthcare. Following a situational analysis of Kalutara Educational Division (KED), drug addiction, poor menstrual hygiene, poor oral hygiene, reduced water intake, consumption of fast foods and rising trend of malnutrition-related problems were identified among adolescents. 'Teaching-Life-through-Schools' Project was initiated to address these through improved liaison between multiple stakeholders.

Aims: To strengthen partnership between health and education sectors and coordinate establishment of Zonal Health Committee in KED

Methods: Ten key informant interviews from education and health sectors were conducted from 28th January-15th February 2019. Inter-sectoral panel discussion leading to development of divisional intersectoral action plans and capacity building programme were held with 140 participants comprising of principals, teachers, students, Public Health Inspectors (PHI), district public health officers and KED officials. As follow up actions, liaison meetings with district level public health officers and zonal level officers; sharing of resource materials; and twice-weekly phone calls and visits were conducted to ensure sustenance of the programme.

Results: A platform for health and education sectors to discuss issues pertaining to school health promotion (SHP) was established. Difficulties in implementing SHP programmes were: poor collaboration between health and education sectors, priority given to maintain school results over student health status, poor awareness on improving adolescent health, poor cooperation by canteen owners, parents, local government authorities and, poor attitudes. Issues to be addressed in short and long-term were highlighted and action plans for SHP in all schools were developed. This enabled district public health officers and KED officials to conduct a zonal health committee meeting, a government requirement, successfully, after being dormant for three years, in March 2019. Advocacy, mediation and national-level guideline formulation for corporal punishment and identifying positive disciplinary methods within school settings were initiated. A programme for school health authorities on positive behavior support was planned. Specific officers were delegated to sustain collaboration through a mutually agreed zonal action plan.

Conclusions & Recommendations: Inter-sectoral collaboration enhanced through this project was successful in initiating adolescent health promotion in KED.

Key words: *Health promotion, School health, Adolescent health*

OP 132

Effects of Paternal alcoholism on the Psycho-behavioral Outcomes of Children: Systematic review and Meta-analysis

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Background: Documented literature includes mixed interpretations of the impact of paternal alcoholism on psycho-behavioral well-being in children. A systematic review and a meta-analysis would facilitate the accurate establishment of this association.

Aims: To evaluate the effects of paternal alcoholism on the psycho-behavioral well-being of children by a systematic review with a meta-analysis and a narrative review component

Methods: This PROSPERO registered review (CRD42018114754) was conducted by reviewing searching literature in MEDLINE, EMBASE and PsycINFO databases. Twenty-nine articles out of 16398 were selected for data extraction after three selection rounds. Thirteen were included in the meta-analyses for four numerical outcomes and two categorical outcomes. Meta-analysis outcomes included; internalizing behavior, externalizing behavior, depression and anxiety. Heterogeneity, risk of biases and the quality of evidence were assessed. Sensitivity analysis was done by re-analyzing with random-model assumption following the fixed model assumption. Rev Man (version 5.3) software and "GRADEproGDT" online applications were used. Summary of Findings tables were prepared. A narrative review was done with studies and sub-groups not included in the meta-analysis, under five identified themes: depression and mood disorders; self-perceived mental health problems and personality; aggression; Attention Deficit Hyperactive Disorder and other problems.

Results: With meta-analysis, all four numerical outcomes demonstrated significant standardized mean differences (SMD) with higher values in the group with paternal alcoholism; internalizing behavior= 0.34 (CI=0.21 to 0.47), externalizing behavior= 0.34 (CI=0.20 to 0.48), anxiety= 0.21 (CI=0.09 to 0.33) and depression= 0.36 (CI=0.22 to 0.51). "Low" level was assigned as the GRADE certainty. For the anxiety when it is regarded as a categorical outcome, the resulting relative effect was significant (OR=2.18, 95% CI= 2.03 to 2.33) with "Moderate" certainty. In sensitivity analysis, associations of similar directions were observed. Narrative review reflected other negative psycho-behavioral consequences of children associated with paternal alcoholism, falling under the five identified themes.

Conclusions: Robust findings were observed for the positive associations of paternal alcoholism with the selected psycho-behavioral pathologies of children in the meta-analysis. The narrative review further demonstrated negative implications of paternal alcoholism on five identified thematic areas.

Key words: *Paternal alcoholism, Psycho-behavioral outcomes, Internalizing behavior, Externalizing behavior, Depression of children, Anxiety of children*

PP 001

Access to healthcare services in tribal areas improves maternal and child health: A field experience of Piramal Swasthya's healthcare initiative in rural Andhra Pradesh, India

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Background: Nearly one-tenth Indian population live in Tribal areas. Poor healthcare infrastructure and nonavailability of human resources are some of the major reasons for weak primary care services leading to worst maternal and child health (MCH) outcomes among tribals. Organizing doorstep MCH and telemedicine services can be a tool to improve the health of mothers and children in tribal areas.

Aims: In this study, we report the findings of Piramal Swasthya's tribal health program in the Araku region of Andhra Pradesh state in India.

Methods: Pregnant mothers in 181 habitations were reached through doorstep visits and telemedicine consultations. Health checkups, motivating pregnant mothers for early pregnancy registrations, counseling for institutional deliveries, and specialist consultations at the telemedicine center are the major operational activities of the project. We used eight-year routine operational data (2010-2017) for this analysis. The present study describes the beneficiary profile and changes in the levels of process indicators (institutional deliveries) and outcome indicators (maternal and infant mortality) during the reference period.

Results: Out of total 5469 pregnant women registered, 64% (n=3500) availed doorstep and 34% (n=1860) received telemedicine center services. Seventy percent (n=3828) of them were illiterate and few were educated till matriculation 11% (n=602) and above 17% (n=930). Of all registered women, 75% (n=4102) were in the 15-29 years age group. More than a third (n=2078, 38%) were registered in the first trimester. More than a quarter 29% (n=1586) were pregnant for the first time. A few pregnant women reported previous history of abortion 5% (n=273) and still-births 4% (n=219). A significant change in the levels of institutional deliveries (26.6% in 2010-2013 to 59.3% in 2014-2017 p<0.05) and infant mortality rate (47.1/1000 live births in 2010-2013 to 12.7/1000 live births p<0.05) was observed. No maternal deaths were reported from the project areas in the past four years (2014-2017).

Conclusions & recommendations: Access to healthcare services significantly improves maternal and child health outcomes among tribal women. However, such interventions need careful evaluation before scaling up.

Keywords: *Tribal health, Pregnancy, Antenatal care, Infant, Telemedicine*

PP 002

Sri Lankan clinical practice guidelines: A methodological quality assessment

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Background: Clinical practice guidelines (CPG) play a major role in the improvement of quality patient care in Sri Lanka. The Appraisal of Guidelines for Research and Evaluation (AGREE) II instrument is a globally used tool to assess the methodological quality of the CPGs.

Aims: To evaluate the methodological quality of the Sri Lankan CPGs developed in 2007, utilizing AGREE II instrument.

Methods: A total of 94 CPGs developed by several professional colleges in Sri Lanka in 2007 were evaluated by two independent reviewers using AGREE II instrument for their methodological quality. AGREE II assesses the quality of a CPG through 23 key items under 6 domains. Item score being ≤3 points defined an item as "poor quality". Each domain score was calculated according to AGREE II. A guideline was labelled as "strongly recommended" if four or more domains scored above 60%, "recommended for use with certain modification" if only three domain scores were above 60% or if four or more domain scores were between 30% and 60%, and "not recommended" if four or more domains scored less than 30%.

Results: Most (n=21; 22.3%) guidelines were developed by the College of Pathologists. Most of the guidelines (n>53; >56%;) poorly reported on all the items, except for items 1, 2, and 22 of AGREE II. Median domain scores [range] and the number [proportion] of the guidelines with domain score of <30% were as follows: domain on scope and purpose (33.3% [2.8%-83.3%]; 40 [42.6%]); stakeholder involvement (14.9% [0.0%-61.1%]; 77 [81.9%]); rigour of development (6.1% [0.0%-49%]; 93 [98.9%]); clarity and presentation (30.5% [8.3%-61.1%]; 44 [46.8%]); and applicability (8.3% [4.2%-14.6%]; 94 [100%]). All CPGs scored 50% for "editorial independence". Reviewers reported the overall quality was poor in 86 (91.5%) CPGs. Based on the definitions used in the study, of the 94 CPGs, 8 (8.5%) could be recommended to be used with modifications, while 86 (91.5%) could not be recommended for clinical practice.

Conclusions & Recommendations: The methodological quality of the CPGs was poor irrespective of the source of development. Major efforts by policy makers are essential to update the CPGs according to the principles of evidence-based medicine.

Key words: *CPG, Quality, AGREE-II, Sri Lanka*

PP 003

Patient experiences of access to NCD medicines in Sri Lanka: Evidence of the success story towards Universal Health Coverage

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Background: The burden of Non communicable diseases (NCDs) is increasing in Sri Lanka. With the prime objective of ensuring access and affordability to NCD medicines in Sri Lanka, in 2013, 16 medicines were identified as priority to manage NCD at primary level healthcare institutions and in 2017, 48 commonly prescribed groups of NCD medicines were price regulated.

Aims: To describe the experiences related to NCD follow up care with an emphasis on availability of drugs and out of pocket expenditure (OOPE) for drugs among patients with NCDs in Sri Lanka.

Methods: This was a community-based, household survey carried out in one randomly selected districts of each 9 provinces. Grama Niladhari (GN) area was considered as the primary sampling unit and a cluster. Each selected district was allocated 4 clusters. The required sample was 1000 thus, the survey included 40 clusters to recruit above 50 years old, study units with a diagnosis of NCD for 5 years. They were interviewed by trained pharmacy students. Sample weights were used for final analysis.

Results: Approximately 66% (n=626), 49% (n=485) and 21.6% (n=204) suffering from hypertension and /or diabetes and/or ischemic heart disease, respectively with a majority having more than one NCD. The evidence showed that prescribers align their prescriptions to drugs that have been recognized to be made more available and more affordable. Of all, 14% had prescriptions with all NCD medicines classified in the list while 40% had only one or two of the drugs prescribed not in the list. Most of prescribed drugs were also included in the price regulated list, with 29% having all medicines included while 31.6% having only one/two drugs prescribed out of the list. Approximately two thirds (64.2%), had exclusively used government hospitals for NCD care during the past five years. A majority (58.3%) had all prescribed drugs available at the last visit to the state sector clinic while almost all of the others (35.7%) had some of the drugs available.

Conclusions & Recommendations: Patient experiences of access to NCD medicines in Sri Lanka showed good availability and access to NCD medicines in Sri Lanka.

Key words: *NCD medicines, Price regulation, Out of pocket expenditure, Availability of medicines, Follow up care*

PP 004

Mohalla clinics in Delhi: An innovative model to achieve universal health coverage in India

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Background: Mohalla or neighborhood clinics of Delhi State in India are low cost, pre-fabricated portacabin structures which provide preventive, promotive and curative health care services to the community near to their residences.

Aims: To describe Mohalla Clinics in detail which aim to provide basic health services to underserved population in urban setting in Delhi close to the vicinity of residents.

Methods & Results: Directorate of General Health Services under state Government is a implementing agency to ensure free healthcare services within a walking distance (around 2-3 km radius or 10-12 minute walking distance), open for at least 6 hour per day, assured availability of identified basic health services, medicines, and diagnostic tests. An innovative concept of Mohalla Clinic is being implemented across Delhi State since 2015. Estimated 85%- 90% of health problems are likely to be treated at this level reducing the numbers of patients for referral to higher levels. Population targeted was underserved, migrants, Jhuggi Jhopri colony; each clinic aim to serve approximately 10,000-15,000 population. The construction cost of each clinic was estimated to be nearly 20 lakh Indian Rupees (or approximately US $30,000). **:** The first clinic was set up in Portacabin structure at government land in year 2015. As of now 189 Mohalla Clinics are functional in Delhi. Every clinic on average is catering 80–100 patients per day. By January 2019, around 11.9 million patients have been examined and 0.74 million lab tests have been done at these facilities. 212 assured lab tests and 90-100 assured medicines as per essential drug list are provisioned along with quality health care which is affordable and accessible to citizens in their vicinity through Mohalla Clinics.

Conclusions & Recommendations: Establishment of Mohalla Clinics in Delhi is a low cost, innovative, positive step towards achieving the universal health coverage in India. Earlier conventional structure of Dispensaries run by State Government used to be constructed at a cost of 20-30 million, much higher capital cost as well as running cost in comparison to present functional Mohalla Clinics to provide primary health care. Upcoming Mohalla Clinics have brought health as an agenda higher on the political discourse. This model can be replicated in other parts of India and across other countries to assure Universal Health Coverage at low cost.

Key words: *Mohalla Clinics, UHC, DGHS, Delhi*

PP 005

Knowledge and seeking of information on depression by patients treated for depression at the clinics of National Institute of Mental Health

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Background: Depression is a widely prevalent, highly disabling mental illness. Being well-informed on the disorder has been shown to reduce the rate of relapse and to diminish the severity of symptoms among patients with depression.

Aims: To describe the knowledge on depression and utilization of sources of information, among patients followed up at general psychiatric clinics of the National Institute of Mental Health.

Methods: A cross sectional study was conducted among 385 patients with depression followed up at general psychiatric clinics of the National Institute of Mental Health. All the eligible patients who attended the clinic during the period of data collection were recruited. An interviewer administered questionnaire was used collect data. Findings were described using frequency tables and significance of associations was tested using the Chi square test.

Results: The level of knowledge on depression was good among 23.1%, satisfactory among 57.1% and poor among 19.7% of patients. Being Sinhalese (p=.027) and having received education beyond grade five (p=.001) were significantly associated with the level of knowledge. Among respondents 97.9% claimed to almost always use the treating clinician as the source of information while only 4.4% claimed to use internet to seek information on depression. While 99.2% of them were extremely confident in seeking information from the treating clinician only one among the 385 patients was extremely confident in using internet for the purpose. Only 29.6% of the patients had ever come across any form of reading material on depression and 52.3% admitted of hardly being confident in seeking information through printed sources. Although only 7.5% of them had ever been at a health education session, 96.5% of those who were exposed said the knowledge imparted at the session was useful and 86.2% of them perceived it to be an extremely credible source.

Conclusions & Recommendations: The level of knowledge on depression among the respondents was satisfactory. Clinicians were the most widely utilised source of information. Passive sources like internet and printed material are seldom used and patients lack confidence in their ability to do so. Past experiences of patients and the confidence placed on it makes health education sessions an effective yet underutilized tool in educating patients at the clinic.

Key words: *Depression, Knowledge, Information seeking behaviour*

PP 006

Patients' satisfaction on the health care services of the clinics at Medical Officers of Health area, Kurunegala, Sri Lanka

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Background: Primary health care involves a sustained partnership between patients and providers that addresses the majority of a population's health needs over time. Patients' perception of satisfaction is an aspect of healthcare quality that is being increasingly recognized for its importance.

Aims: The objective of this study was to assess the perception of satisfaction on the services provided by preventive sector clinics at the Medical Officers of Health area (MOH), Kurunegala, Sri Lanka.

Methods: Institutional based descriptive cross-sectional survey was carried out during May to August 2018 at the Maternal and Child Health Care clinics (MCH) in Kurunegala MOH area. The clients (between 18 to 70 years) who attended to the MCH clinic during 1st of May 2018 to 1st of August 2018 were included in the study. Systematic random-sampling techniques was used to select the study sample of 427. A self-administered pre-tested validated questionnaire which was designed by the Management Development and Planning Unit, Ministry of Health, Sri Lanka was used.

Results: The response rate was 93% (n=398). The age range was 18 to 47 years. The mean age was 29.3 with the SD of 5.5. There was 94.2% (n=375) females. Ninety participants (22.6%) were come to the clinic as a recommendation by a doctor, and another 22.6% (n=90) was participated by the recommendation by another client. Among the study participants, 57.3% (n=228) were resided within the 2km of distance from the clinic settings. Among them, 58.8% (n=233) had good first impression on service providers and 63.3% (n=252) were satisfied on patient care services. Fifty five percent (n=214), 69.1% (n=275), and 56% (n=223) of the study population were not satisfied with the waiting time, available facilities and overall quality of care respectively. The female clients were satisfied with the quality of care than male clients, category with low education level was more satisfied with quality of care than those with the higher education level, working population was more satisfied with available facilities than non-workers, the clients who were residing within less than 2km were more satisfied with quality of care than distantly residing clients and those associations were statistically significant ($p < 0.05$). The client who had good first impression and satisfied with patient care services, waiting time, available facilities and overall quality were more likely to recommend the clinic for another client for granting care from those clinic ($p < 0.05$).

Conclusion: The quality of care of the clinic services can be improved by improving the first impression, patient care services, available facilities and reducing waiting time.

Keywords: *Primary health care, Perception, Satisfaction, Healthcare quality*

PP 007

Developing a project, using health promotion approach for addressing determinants of school performance of children in a rural village Welankulama in Sri Lanka

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Background: School education affects person's whole life and there are many factors affecting it. Health promotion is an approach that could be adopted in a number of settings to improve health and social conditions.

Aims: To describe the planning of a project to assess the effectiveness of health promotion approach in improving school performance of children by addressing selected determinants in a rural village Welankulama in Sri Lanka.

Methods: Four undergraduates in Department of Health Promotion in Rajarata University of Sri Lanka were assigned to facilitate the whole process in Welankulama village during 2-year time period. The study was designed to be conducted with 41 children including 25 girls and 16 boys aged 5-18 years in Welankulama village. Focus group discussions with children and their parents were decided to be conducted to increase parents' and children's' enthusiasm for school performances of children and to enable parents and children to identify poor school performances in this village as a problem. Facilitators were assigned to identify superficial determinants and hidden determinants affecting poor school performance of children in this village with them. Facilitators were then assigned to improve parents' and children's' skills and involvement required to address selected determinants. Data were to be collected by facilitators using focus group discussions, observations and questionnaires.Pre and post data were planned to be analysed using thematic analysis methods and statistical methods. Some indicators for the evaluation of the effectiveness of this health promotion project were percentage of improvement of children for attending school, percentage of students who increased their term test marks, and percentage of decrease in school drop-outs.

Results: This developed health promotion project plan was approved to be conducted in this village by the University. This project was based on principles of health promotion such as ensuring ownership, addressing the determinants, participatory approach, empowerment of communities, mediation, personal skill development and creating supportive environments.

Conclusions & Recommendations: Health promotion approach is amenable to be adopted in addressing "non-health" problems such as school performance.

Key words: *Health-promotion, Project, Rural, Children*

PP 008

Quality of life and its associated factors among government Medical Officers in Uva province, Sri Lanka

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Background: Higher quality of life among medical officers has been identified as a key factor of increased productivity during health service delivery. The quality of life and its associated factors among grade Medical Officers are not known in Sri Lanka.

Aims: To determine the quality of life and its associated factors among grade Medical Officers in Uva province

Methods: A descriptive cross sectional study using a self-administered questionnaire was carried out in the study population. A sample of 403 grade Medical Officers were selected. There were different categories of health institutions including preventive and curative sector and the number of grade Medical Officers from each institution was selected proportionately. Simple random sampling method was used for sampling in the institution. Grade Medical Officers who worked less than one-year period were excluded from the study. Independent t test and one way ANOVA was used appropriately to determine the statistical significance. WHO-QOL BREF tool was used to assess the level of quality of life.

Results: The mean quality of life score of grade Medical Officers was 65.1 (SD+-11.3) and all four domains had mean scores above 60. Being a male, having post graduate qualifications, good family income, being engaged in a private practice, having two or more children, living in an own house, not having noncommunicable diseases, doing regular physical exercises and having an adequate sleep were statistically significantly associated with a higher quality of life among study population (P <0.05).

Conclusions & Recommendations: The level of quality of life of government Medical Officers in Uva province was satisfactory. Individual domain scores also showed higher quality of life levels. There were number of adjustable behavioural factors identified which could be used for further improvement of quality of life of doctors.

Key words: *grade medical officer, quality of life, physical activity, private practice*

PP 009

Effectiveness of Interventions for reducing Work-related Stress in Healthcare Workers: An Evidence Review

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Background: Work stress is a worldwide occupational health issue, particularly high amongst healthcare workers being a human service. Work stress is associated with poor performance, low job satisfaction and poor wellbeing. In designing preventive programs for work stress, evidence-based interventions provide promising impact. A review of the evidence on effectiveness of interventions for reducing work stress in health care was undertaken to facilitate development of the wellbeing strategy of Midlands Partnership NHS Foundation Trust.

Aims: To review evidence on effectiveness of interventions for reducing work stress in health care workers.

Methods: Online bibliometric databases were searched for articles published between year 2000 up to December 2018. Systematic reviews (with or without meta-analysis) of interventions to prevent work related stress, job stress, occupational stress, burnout and compassion fatigue in healthcare workers were included. Interventions for health-care personnel alone were included allowing application of evidence for health staff. Review included 44 eligible full papers and two reports.

Results: Mindfulness Based Relaxation Techniques decreased work stress of health staff (p<0.00002, medium effect (r=0.34, 95% CI: 0.20-0.47). Cognitive behavioural therapy based approaches (CBT) with follow up of 1-6 months (SMD=0.38, 95% CI: 0.59-0.16), and > 6 months (SMD=1.04, 95% CI: 1.37-0.70) was effective. Physical relaxation reduced stress at one month (SMD=0.48, 95%, CI: 0.89-0.08; 4 studies, 97 participants) and 1-6 months follow-up (SMD=0.47; 95%, CI: 0.70-0.24). Mental relaxation with meditation reduced stress symptoms at one-six months follow-up (SMD=0.50, 95%, CI: 1.15-0.15). 12-weeks of yoga improved work-stress (t=-3.216, p=0.002). Organisation-centred interventions included changing work schedules, supportive supervision & mentoring.

Conclusions & Recommendations: Mindfulness based interventions, CBT based approaches, physical and mental relaxation methods and flexible work schedules under person centred and organizational strategies show promising results on work stress prevention among health staff. However, adoption needs to be context specific.

Key words: *Effective Interventions, Work stress, Healthcare worker*

PP 010

Knowledge and attitude on implementation of electronic Indoor Morbidity and Mortality Return of Heads of institutions of hospitals in Eastern Province, Sri Lanka

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Background: The Fourth Industrial Revolution builds on the digital revolution, representing new ways in which technology becomes embedded within societies and even the human body. Health information system is one of the building blocks of health system framework where sound and reliable information is the foundation of decision-making across all health system. To strengthen the Health system, information system should be converted electronically. The electronic Indoor Morbidity and Mortality Report (eIMMR) system in Sri Lanka is the national system that replaced manual recording and reporting of indoor morbidity and mortality return.

Aims: To assess the knowledge and attitude on eIMMR of Heads of institution of hospitals in Eastern Province Sri Lanka.

Methods: Descriptive cross-sectional study was carried out in all 64 hospitals in Eastern Province including both line and provincial ministry institutions except Primary Medical Care Units which do not have in ward facilities. Hospitals 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 not implemented at all. Questionnaire was used to assess the knowledge and attitude on eIMMR of Heads of institution (HOI) of above hospitals (n=64). Data collection was carried out in May 2018. Marks for knowledge and attitude were given in percentage.

Results: Response rate was 92.1% (n=59). Only 27.1% (n=16) of HOI had undergone training on eIMMR and among them, 50% (n=8) were from group 1 hospitals. Descending pattern was observed in median of knowledge score with inter quartile range on eIMMR of HOI from group 1 to group 3 respectively 60±30, 56±20 and 46.5±15. Statistically significant difference was found in median score of knowledge in between 3 groups of hospitals (Kruskal-Wallis Test, p=0.02). Median knowledge score was significantly high in group 1 compare to group 3 (Mann-Whitney U test, p=0.01). The median attitude score on eIMMR was high and same value in group 1 and 2 hospitals (78.0), compared to that of group 3 (72.0). There was no statistically significant difference on attitude score seen between three groups (p=0.76).

Conclusions & Recommendations: There are differences in knowledge on eIMMR between HOI. Level of attitudes on eIMMR was not significant. In-service training program for capacity building on eIMMR is recommended to fill the knowledge gap on eIMMR.

Key words: *Knowledge, Attitude, Indoor morbidity and mortality return*

PP 011

Healthy lifestyle practices and their association with selected nutritional parameters among the school children in Sri Lanka

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Background: Nutritional parameters influence the school performances of the children.The proper evaluation of these would provide scientific evidence on the actual burden of the problem. In addition, the distribution of BMI, prevalence of wasting and stunting would provide evidence on the actual burden of nutritional problems among school children. This study will pave way to create national level protocols and guidelines and help in planning of interventions to achieve better nutritional parameters among school children.

Aims: To describe the selected nutritional parameters and lifestyle practices in relation to health among school children in Gampaha Educational zone.

Method: A descriptive cross sectional study was carried out in Gampaha educational zone in Gampaha district. A sample of 4980 students was selected by cluster sampling method. An interviewer administered pre –tested questionnaire was used to collect the data during the study period. Weight and height were measured in all students.

Results: From the total sample 50.1% (n=2496) are males and 95 % (n=4752) were Buddhists. Around 60 % (n=2360) of parents had educated up to A/L representing good literacy level. Stunting or the reduced height for the age was high among grade five, six and seven (age 10, 11 and 12) students, which was 9.9% (n=42), 9.4% (n=38) and 9.5% (n=39) respectively. Wasting or reduced weight for height was gradually decreasing with the age. Wasting was highest in the grade one students which is 35.2% (n=138). Highest percentages of overweight were observed in grades 7, 8, 9 and 10 which was around 10%. According to the study 33.3% (n=1566) of children were not engaged in any type of physical activity like sports but around 98% (n=4836) of the children bring water bottle to school as well as the morning meal to the school.

Conclusions & Recommendations: Targeted interventions should be implemented for the students with stunting (grade five, six and seven), wasting (grade one) and overweight (grade seven, eight, nine and ten). Increasing overweight among adolescents is becoming a social problem so it's timely to implement the health promotional and behavioral change strategies among school going children. Overweight goes parallel with the low physical activity and needs to be addressed in the school health programme in future.

Key words: *Nutritional, School children, Life style practices*

PP 012

Oxidative stress in nurses handling antineoplastic drugs: A hospital-based cross-sectional study using AOPP bio-marker

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Background: Nurses occupationally exposed to Antineoplastic drugs (AND) during handling are at risk of AND-induced oxidative stress. Early determination of oxidative stress can prevent adverse drug effects in the exposed nursing professionals. Bio-marker for protein oxidation, advanced oxidation protein products (AOPP) which is created by oxidative stress can be quantified by absorbance at 340 nm using ultraviolet spectrophotometer.

Aims: To analyse serum AOPP levels to detect oxidative stress in nurses involved in the preparation and administration of AND for more than 3 months and to correlate the AOPP levels with the safety measure followed during AND handling phase.

Methods: Hospital-based cross-sectional comparison between serum AOPP levels of nurses occupationally exposed to AND & serum AOPP levels of nurses not exposed to AND was conducted within a time frame of 2 months at a tertiary care hospital in Mangalore after obtaining ethical clearance from Father Muller Institutional Ethics Committee. Nurses between 20 and 40 years of either sex were included. 33 nurses volunteered to be included in the exposed group and 30 nurses volunteered in the unexposed group. Baseline data regarding age, gender, marital status, experience of handling AND, and safety procedures followed (for exposed group) were collected in data collection sheet. Blood sample (2ml) was collected in coded vacutainers from nurses of both the exposed and unexposed group. AOPP was measured using modified AOPP method by absorbance at 340 nm using ultraviolet (UV 1700) spectrophotometer and AOPP readings were expressed in chloramine-T equivalent.

Results: Serum AOPP level in the AND exposed group was found to be significantly higher than serum AOPP level in the AND unexposed group (p<0.001). A subgroup analysis of the exposed group has shown that there was no significant difference of serum AOPP level between the nurses handling AND for ≤1 year and those nurses handling AND for > 1 year. Also there was no difference between nurses using bio-safety cabinet and those nurses who did not have access to this equipment. Safety procedures undertaken by the exposed group were as follows: (1) All 33 subjects reported usage of latex gloves and disposable mask during the administration of chemotherapy; (2) 18 subjects had access to bio-safety cabinet only for past 6 months. This provision was not utilized by nurses, due to high patient load (as reported by the nurses). (3) 15 subjects did not have access to bio-safety cabinet as they were not provided by the hospital

Conclusions & Recommendations: The protein oxidation bio-marker AOPP is found to be elevated in nurses exposed to AND irrespective of the period of exposure. This suggests the effect of improper utilization of this safety equipment. Hospital administration should ensure that basic safety measures are being followed by nurses to prevent occupational exposure to AND by conducting regular inspections.

Key words: *Antineoplastic drugs, Biosafety cabinet, Advanced oxidation protein products, Nurses*

PP 013

Doctors or Nurses: Time to shift task strategically

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Background: The Infant Mortality Rate (IMR), Maternal Mortality Ratio (MMR) and Full Immunization Coverage (FIC) are core indicators to measure well-being of infants, children, and pregnant women. Under SDG 3, by 2030, India aims to achieve MMR of 70 per 100,000 live births, Under 5 Mortality Rate of 11 per 1000 live births and FIC of 100%. India has made remarkable progress in this direction and that could be possible only through investing in all areas: Infrastructure, HR, Training, Ownership, Financing and others.

Aims: To assess the progress in key health indicators in terms of investment in different HR cadres

Methods: Rural Health Statistics (RHS), published annually by Ministry of Health and Family Welfare (MoHFW) were perused for information on various aspects of Rural Health care services including rural health infrastructure, building position of health facilities Health Human Resources, their training needs, etc. The data also record the shortfall against the required number of positions. Data for starting year (2005) and 2018 were compared on certain aspects to look at the progress made in terms of infrastructure and availability of services in public health sector.

Results: With increment of 18% in total population in this duration 2005 to 2018, IMR has come down to 41%, MMR has come down to 49% and FIC has increased to 43%. The investment for infrastructure were as follows: 8% increment in Sub Health Centres (SHCs); 11% in Primary Health Centres (PHCs); 68% in Community Health Centres (CHCs). For Human Resources (HR) investments were as follows:65% more Frontline Health Workers; 36% more Doctors at PHCs; 15% more specialist at CHCs; 62% more pharmacist at PHCs and CHCs; 58% more Lab Technicians; 192% more nursing staff at CHCs and PHCs. The increase of % shortfall against the required numbers were from 4.3% to 14.3% for Doctors; 45.7% to 81.9% for Specialists;35.1% to 64.7% for Radiographers; 10.8% to 15.7% for Pharmacists; 27.2% to 39.4% for Lab Technicians. However, in the same duration (2005 to 2018), the shortfall for nursing staff at CHC and PHC has decreased from 28.6% to 12.7% and now 192% more nursing staff is placed at CHC and PHC.

Conclusions & Recommendations: India need to think in investing in nursing education and in placing the nursing staff at lowest possible service delivery level so that every child and mother can be promised quality care and envisaged targets of SDG 3 can be achieved.

Key words: *Doctors, Nurses, Task shifting, Human Resource*

PP 015

Adolescent headache: A symptom not to be underestimated

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Background: Headache is a common symptom among adolescents, which is shown to be associated with a significant drop in quality of life and negatively affecting the activities of daily living, though the Sri Lankan situation is yet to be explored.

Aims: To assess impact of headache including quality of life among schooling adolescents aged 13 -15 years in the district of Colombo.

Methods: This cross sectional study was conducted among 901 students aged 13-15 years selected from government schools in Colombo district by multistage cluster sampling in 2016. Those with headache were identified using self-administered, Headache Attributed Restriction, Disability, Social, Handicap, and Impaired Participation (HARDSHIP) questionnaire for adolescents validated for Sri Lanka. Number of days suffered with headache, medication requirement to get relief, losing full school days and having had to leave early were inquired into. Quality of life and impact were also assessed using the HARDSHIP and the scores were compared with those who had headache and who did not, between types of headache and the age sex difference among those who had headache using t-test and ANOVA.

Results: A total of 189 (21%) has reported any headache on the day prior to the survey out of which 14 (7.4%) has lost school. During the last one month 438 (48.6%) have reported having at least one headache while a total of 2009 days estimating 2229.7 headache days per month per 1000 adolescents. Two hundred and seventy two (61%) had taken medication for headache, 135 (30.8%) lost school due to headache, 53 (12.1%) left school early and 211 (48.2%) lost the planned work due to headache. Impact of headache was more among those who had migraine (p<0.001) compared to other types of headache while there was no difference between sex and age. Quality of life was more affected in males with headache compared to females (p <0.001), those who had migraine compared to other types (p < 0.001) and who had headache last month compared to who did not (p <0.001).

Conclusions & Recommendations: Headache has an impact on adolescents' lives by preventing them participating fully in the educational activities and by affecting their quality of life.

Key words: *Headache, Adolescent, Impact, Quality of life*

PP 016

Strengthening adolescent health in the field: Qualitative assessment of public health midwives' perception

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Background: Adolescence is a transitional period in life where children are at a higher risk for developing unhealthy behavioural patterns. Public Health Midwife (PHM) has a major role to play in this period as the main formal caregiver for adolescents in the field.

Aims: To describe Public Health Midwives'(PHMs) perception on their role, barriers, strengths and suggestions for improvement of their contribution for adolescent and youth friendly health services (AYFHS) among PHMs in Gampaha District.

Methods: A qualitative assessment was conducted using four Focus Group Discussions (FGDs). Nine to 10 field health PHMs in Gampaha district participated for each discussion. Focus group guide was developed in consultation with the experts in the field of adolescent health and qualitative research. Informed verbal consent was obtained prior to discussions. Two experts in the field of qualitative research conducted FGDs ensuring privacy and confidentiality using the FGD guide. Discussions were audio-recorded and non-verbal responses were noted down. Each session lasted 60-90 minutes. Recordings of FGDs were transcribed. Data analysis was conducted using the concepts related to Grounded theory' by coding, identifying categories and themes with constant comparison. Results were presented in narrative form.

Results: Themes identified were PHMs' perception of the need of AYFHS, PHMs' role, barriers and strengths in service provision and suggestions for improvement of AYFHS. All the PHMs had firm realization of the need of the provision of AYFHS in the field. They emphasized on having easily accessible services for adolescents. Their perception on their role on provision of adolescent health was poor. They had their concerns on their workload. Barriers identified by them were: reaching adolescents, having their trust, their poor health seeking behaviours and lack awareness of the available services in the community. They identified that their role of providing domiciliary visits for the families as a major strength for provision of AYFHS. Their recommendations were having interventions for increasing health seeking behaviour of adolescents and addressing the existing gap in awareness on AYFHS in the community.

Conclusions & Recommendations: Main barriers identified were reaching adolescents, having their trust, poor health seeking behaviours and lack awareness of AYFHS and PHMS' workload. PHM providing domiciliary visits

for the families was a major strength. Study recommends interventions for on increasing health seeking behaviour of adolescents and addressing the existing gap in awareness on AYFHS.

PP 017

Factors influencing alcohol use among adolescents in South Asia: a systematic review of the literature

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Background: Harms of drinking during adolescence can be discussed in terms of its effects today as well as its future impact. With evidence that the safe level of alcohol drinking is zero, adolescent drinking becomes a serious public health concern. Knowledge on social and structural determinants of alcohol use among adolescents in low- and middle-income countries is largely unclear.

Aims: This study describes the factors influencing alcohol use among adolescents living in South Asia.

Methods: A systematic review was conducted to describe the factors associated with alcohol use amongst adolescents in South Asia (Afghanistan, Bhutan, Bangladesh, India, Maldives, Nepal, Pakistan, Sri Lanka). We included quantitative and qualitative studies reporting factors influencing alcohol use among 10-19-year olds living in South Asia from eight databases SCOPUS, MEDLINE (Ovid Sp), EMBASE, CINHAL Plus, Cochrane Library, PsycINFO, AMED, Child Development & Adolescent Studies (EBSCO Host), grey literature and relevant websites. Narrative data from selected studies were synthesized based on the influences at psycho-individual, family, school, peer, neighbourhood and country levels. Pooled prevalence of alcohol use among adolescents was calculated using the Medcalc software. Search was done from November 2017 to January 2018. The QATSDD tool was used for quality assessment. The study protocol was registered with PROSPERO (CRD42017084773).

Results: Twenty-three studies conducted in India (n=14), Sri Lanka (n=6) and Nepal (n=3) were eligible for inclusion. Male gender, age >14years, depression, religious belief, parental/family members' drinking, home brewing, reduced parental attention, peer-drinking/pressure/approval and urban neighbourhood were associated with increased risks of adolescent drinking. Influences from school, policy, industry and social and other media were not identified in this review. No information was available from Afghanistan, Bhutan, Bangladesh, Pakistan and Maldives. Of the 13 studies that reported prevalence of adolescent alcohol use, the total pooled prevalence was 22.45% (95% CI 4.33 – 48.72).

Conclusions & Recommendations: The little evidence available on the distal level determinants such as national (legislature, industry and media), school and personality level need further exploration in order to clearly understand the factors influencing alcohol use among adolescents living in South Asia.

PP 019

Prevalence of hypertension among adolescents (10-19 years) in India: A systematic review and meta-analysis of observational studies

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Background: Despite considerable concerns on the threat of elevated blood pressure in children and adolescents, pooled data on the burden among Indian adolescents have not yet been synthesized.

Aims: To perform a systematic review with meta-analysis to calculate the pooled prevalence of hypertension among adolescents (10-19 years) in India.

Methods: We searched PubMed, EMBASE, Google Scholar and IndMed to identify articles published from their inception till 1st January 2019. Two independent reviewers screened all the titles and abstracts and searched reference list of retrieved articles. Cross-sectional studies conducted among children and adolescents that provides enough data to extract the hypertension prevalence between 10-19 years were included. Random effects model was used to estimate prevalence, and heterogeneity was assessed using I^2 statistic. Publication bias was assessed by funnel plot and Egger's test. Sub-group analysis was done based on region, study setting and criteria. Meta-regression was done to explore the cause of heterogeneity. Modified New castle Ottawa scale was used to assess the risk of bias based on the research design, recruitment strategy, response rate and reliability of outcome determination.

Results: We included 26 studies reporting data of pooled sample of 28,355 participants aged 10–19 years. Six studies were of high quality and remaining twenty were of moderate quality. Prevalence of hypertension varied between 2% and 20.5%. The pooled estimate was 7.64% (95% CI: 6.13% to 9.14%). Heterogeneity test showed $I^2 = 96.6\%$, p <0.001. Funnel plot showed a symmetrical distribution of studies, which was confirmed by Egger's test. Sub-group analysis based on region demonstrated acceptable heterogeneity ($I^2 = 18.3\%$, p = 0.29) only in the western part of India. Sub-groups based on study setting and criteria showed high heterogeneity which could be due to methodological and geographical variations. Meta regression could not explain the cause for heterogeneity.

Conclusions & Recommendations: This study suggests a high prevalence of adolescent hypertension in India. Early detection by screening for hypertension among students under school health programme and opportunistic screening at Paediatric OPD should be implemented by Policy makers. Large-scale population-based studies using robust methodology to accurately estimate the prevalence of adolescent hypertension is needed.

PP 020

Knowledge and attitudes related to contraception among A/L students in Gampaha educational zone and factors associated

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Background: Advanced level students will shortly leave school, beginning a new chapter in life. Age limit to consent for sexual activities in Sri Lanka is 16 years. Thus, A/L students should have a thorough knowledge on contraceptive methods as unprotected sex leads to unwanted teenage pregnancies, criminal abortions, sexually transmitted diseases and other negative health outcomes.

Aims: This study aimed to assess the knowledge and attitudes on contraceptive methods and their association with selected sociodemographic factors among GCE A/L students attending tuition classes in Gampaha educational zone as schools may be a restrictive environment for studies in this theme.

Methods: A cross-sectional analytical study among 277 GCE A/L students selected using a multistage sampling method combining systematic and cluster sampling was employed. Data was collected using a self-administered questionnaire after obtaining informed written consent as all approached were above 18 years. Knowledge and attitudes were analyzed using descriptive statistics and knowledge levels of selected socio-demographic subgroups were compared using one-way ANOVA.

Results: A total of 277 (Male; n=118, 42.6% ; Female; n=159, 57.4%) participated in the study. Knowledge was low for all contraceptives: pills (Mean=1.4, SD=1.67, Max Score=7), condoms (Mean=1.4, SD=1.22, Max Score=6), IUCD (Mean=0.8, SD=1.19, Max Score=7), injectables (Mean=0.4, SD=0.81, Max Score=7), emergency methods (Mean=0.8, SD=0.90, Max Score=4), permanent methods (Mean=1.0, SD=1.0, Max Score=3). Male students (F=30.34; p<0.001) and Biology students (F=130.42; p<0.001) showed significantly higher knowledge than others. Related to attitudes: 44.3% (n=117; N=264) stated they would feel suspicious if their partner suggests to use a contraceptive method and 48% (n=129; N=269) stated they'd feel unhappy if they see a contraceptive equipment with their friends. Further, 16.7% (n=46; N=275) thought using contraceptives is a sin and 16.2% (n=44; N=272) stated their use would depend on the partner. Majority (n=214, N=274, 76.7%) thought teaching about contraceptives in school is suitable and 29.3% (n=79; N=270) preferred a parent or another responsible adult to discuss about contraceptives. When considering all methods (N=545), social media was the commonest source of knowledge (n=95, 17.4%). Books (n=91, 16.7%), mass media (n=90, 16.5%) and friends (n=88, 16.1%) were the other commonest sources. Parents were the least common source (n=16, 2.9%).

Conclusions & Recommendations: Among the participants, knowledge was unsatisfactory and a considerable level of negative attitudes prevailed related to contraception. Male and biology stream students displayed a comparatively higher level of knowledge than their counterparts. Social media was the commonest sources of knowledge, thus would be a potential effective platform for knowledge dissemination in this regard.

Key words: *Advanced Level students, Gampaha Educational Zone, contraception, Knowledge, Attitudes*

PP 021

Validity and reliability of Sinhalese preschool version (aged 3-5 years) of Strength and Difficulties Questionnaire

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Background: Strength and Difficulties Questionnaire (SDQ) is a widely used screening tool to detect behavioural problems among children and adolescents. Validation and adoption of a user-friendly screening tool for early identification of children with behavioural problems in the community by both parents and teachers is important to prevent life time negative consequences of children such as violence, addictions, poor work performance, relationship problems and interruption in social development.

Aims: To determine the validity of Sinhala translated and adapted parents' (SDQ-P) and teachers' (SDQ-T) versions of SDQ in order to use it to screen behaviour problems of 3-5-year-old preschool children in the community.

Methods: Descriptive cross-sectional study was carried out among parents and teachers of 290 preschool children aged 3-5 years in Medical Officer of Health area of Maharagama. Total of 290 parents and 16 teachers were considered as participants of the study. Sinhala translated, adapted SDQ-P and SDQ-T were given to be completed by the participants. Clinical examination was carried out blindly to SDQ score by the Consultant Child Psychiatrist based on reference standards of DSM-IV, ICD-10 and clinical experience. The threshold values for SDQs were determined by applying Receiver Operation Characteristic (ROC) curves.

Results: Out of total sample 54% (n=159) were aged 3+ years, and 50% (n=146) were males. Majority of them were Buddhists (n=271, 93%,). More than half (n=171, 59%,) had monthly family income between Rs. 10,001- 40,000. Only 0.06% (n=19) of mothers had education level less than Grade 5. Education level of teachers was not individually assessed, but eligibility criteria to become a preschool teacher were considered. The ROC curve showed optimal cut-off level for SDQ-P as 11.5 with sensitivity of 82% and specificity of 81% and the optimal cut-off level for SDQ-T as 13.5 with sensitivity of 80% and specificity of 80%. Cronbach alpha values were 0.66 for SDQ-P and 0.71 for SDQ-T. There was no significant difference between the two scores of SDQ-P (p=0.29) and SDQ-T (p= 0.40) when reintroduced after two weeks to the same people. Kappa coefficient was 0.83 for SDQ-P and 0.92 for SDQ-T which showed excellent reliability.

Conclusions & Recommendations: Present study demonstrated very high validity and excellent reliability of SDQ-T and SDQ-P questionnaires to identify pre-school

children with behavioural problems. They are recommended to be used in measuring behavioural problems among preschool children in local research in the community.

Key words: *Strength and Difficulties Questionnaire, Preschool children, Validity, Reliability*

PP 022

Determinants of Substance Abuse among Adolescents in India through Conventional and Hierarchical Models

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Background: Substance use in the form of smoking and/ or drinking is a major cause of several non-communicable diseases like cancer and heart diseases and their further worsening. Since adolescents are future of any country, substance abuse among adolescents is a major public health problem. Instead of understanding burden and determinants separately for smoking and drinking, these in relation to smoking and/ or drinking may provide more useful clues to optimally guide the related public health program.

Aims: This study mainly aimed to find out the determinants of substance abuse (smoking and/ or drinking) among adolescents (15-19 years of age) in India.

Materials & Methods: To analyze for the present study, data available under National Family Health Survey was used, which involves hierarchical structure (i.e., adolescents are nested within states). In addition to distribution of substance abuse in relation to covariates, univariable and stepwise multivariable conventional and hierarchical logistic regression models were used to find determinants of substance abuse among adolescents**.** The results were recorded as unadjusted/ adjusted risk measure (odds ratio) along with respective 95% confidence interval.

Results: The analytical results after adjustment in relation to potential confounders including age and gender revealed that substance abuse among adolescents was found to be mainly associated with their less education [1.3 (0.98, 1.84)]; employment [1.5 (1.19, 1.97)]; substance use by mother [2.3 (1.74, 3.04)]; substance use in family [1.4 (1.0, 1.84)]; and also prevalence of alcohol use in the state [1.9 (1.45, 2.44)]. The results under hierarchical model remain almost similar except minor increases in related standard errors, that is, increase in width of the CIs.

Conclusion: This study shows that along with socio-demographic variables, mother, family and community level environments of substance use play major roles regarding substance abuse among adolescents.

Key words: *Substance abuse, Adolescents.*

PP 023

Knowledge and past practices of family planning methods among the antenatal mothers attending the antenatal clinics in divisional hospitals in Beruwala Medical Officer of Health area

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Background: Family planning enables couples to have desired number of children with adequate spacing whilst preventing unintended pregnancies. Inadequate birth spacing is associated with delayed prenatal care and adverse birth outcomes that include preterm birth, neonatal morbidity and low birth weight. Therefore, women's knowledge and practices about family planning are key factors of birth spacing in a family.

Aims: To assess the knowledge and past practices of family planning (FP) methods among antenatal mothers attending antenatal clinics at two divisional hospitals in Beruwala Medical Officer of Health (MOH) area

Methods: Descriptive cross sectional study was conducted among 394 conveniently selected antenatal mothers attending antenatal clinics in two divisional hospitals of MOH area Beruwala using a pre tested questionnaire. Data were analysed with descriptive statistics and associations were determined using chi square test.

Results: The study response rate was 98.5% (n= 394). Mean age of the respondents was 27.2 years (SD=5.4 years). Out of the respondents 88.8% (n= 350) were Muslims and Islamic. Though 92.4% (n=364) had awareness on birth control methods only 19.3% (n=76) were aware of importance of birth spacing. Among the family planning (FP) methods ever used in the past, 17%, (n=67) have used Combined Oral Contraceptive pill (COCP), 14.7%, (n=58) condoms and, 8.4% (n=53) injectable progesterone. Their unmet need for family planning was 20.8% (n=82). The commonest reason for not using family planning was fear of side effects (n=77, 19.5%,). There were no reported failures of family planning among the respondents. There was a statistically significant association between knowledge on family planning and practice of family planning (p<0.001)

Conclusions & Recommendations: This study population significantly lacks knowledge on importance of birth spacing and methods of FP. Increasing awareness on FP of the particular community members is important. Evidence based interactive approaches with close surveillance of outcome of the programs may improve the knowledge and FP practices in this community.

Key words: *Family planning, Birth spacing*

PP 024

Awareness and practice of folic acid supplementation among pregnant women attending Antenatal Clinic in Teaching Hospital Mahamodara (THM).

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Background: Folic acid (FA) is a vital vitamin for reproductive aged women. It prevents congenital neural tube defects. Hence, pregnant women need to know about proper folic acid use.

Aims: To determine knowledge and practice of FA supplementation among pregnant women attending antenatal clinic at THM.

Methods: A hospital based descriptive cross sectional study was carried out among 400 pregnant women who attended antenatal clinic at THM. A pretested structured self-administered questionnaire was used to collect the data. Data were analysed with chi square, independent sample t test by using SPSS 20.

Results: Out of 400 of pregnant women, 39.8% (n=159) were confirmed their pregnancy in 5-6 weeks. Among them, 67.8% (n=271) were multiparous. 33.0% (n=132) of pregnant women were in 25 – 29 years old group. 96% (n=376) of the women stated that they had heard about FA, but only 55.7% (n=199) knew the medical condition which caused by lack of FA. 69% (n=276) of pregnant women were educated on FA by midwives. Similarly, 59.8% (n=239) of pregnant women were educated about benefits of FA before becoming pregnant. However, only 77.8% (n=311) of women knew that they should take it before pregnancy, and 40.5% (n=162) of women knew that they have to continue it for 6 months after delivery. Only 20.2% (n=76) knew the dietary sources of FA. 88.5% (n=354) of pregnant women were taking FA currently and 48.5% (n=194) were taking FA from antenatal clinics. The parity was not associated with knowledge and practices of FA (p>0.05).

Conclusions & Recommendations: Awareness and practice of FA supplementation is adequate but overall knowledge on different aspects of FA supplementation was inadequate among pregnant women attending antenatal clinic at THM. Health educational sessions which address the knowledge gaps need be introduced to this target population.

Key words: *Folic acid supplementation, Awareness, Practice, Knowledge*

PP 025

An assessment of the Immediate Environment of Child Development Centers in the Plantation sector in Badulla District in Sri Lanka

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Background: Children in the plantation sector are the most vulnerable group in Sri Lanka, exhibiting below par health, nutrition and development outcomes. Working mothers in estates leave their children in Child Development Centers (CDC) for custodial care during working hours. Studying immediate environment of CDCs would identify the inadequacies of their environment and would recommend approaches to upgrade them, which in turn ensure optimum health and development outcomes of children cared in them.

Aims: The study aimed to evaluate the immediate environment of CDCs in plantation sector in Badulla District.

Methods: Hundred and seven registered CDCs were assessed using translated and validated "Infant and Toddler Environment Rating Scale-R" (ITERS-R). Out of the 88 small, 129 medium and 44 large CDCs, 36 small, 53 medium and 18 Large CDCs were selected by applying stratified random sampling method. CDCs were assessed under the 7 subscales of ITERS-R, namely, space and furnishings, personal care routines, listening and speech activities, interaction, programme structure, parents and staff. Each response was scored on a subscale of 7-point Likert type scale (1 = inadequate to 7 = excellent) and a cumulative score was given to the CDC under scrutiny.

Results: Half of the CDCs (49.5%) were medium sized and 16.8% were large sized. Seventy seven percent of CDCs had only two care givers and only 2% of CDCs were served by >4 care givers. On average, one CDC catered for 5.6 (SD=3.1), 10.2 (SD=5.0) and 10.3 (SD=4.3) infants, toddlers and pre-school children respectively. Staff to "infant and toddler" combined ratio and staff to under 5 year child ratio reported high values of 7.4 and 14.3. Overall environment of CDCs was just above minimal state (1-2.99 on Likert scale). All the domains other than "Interaction" and "programme structure" were at the minimal state. Only 7.5% CDCs were just satisfactory (>4 on Likert scale) and rest were below par.

Conclusions & Recommendations: The immediate environments of CDCs were not satisfactory. If the conditions of the CDCs were enhanced, it may generate better health and development outcomes of the children cared by these centres and would assist to improve many health-related indicators among children in estate sector.

Key words: *Immediate Environment, Child Development Centers, Plantation sector, ITERS-R*

PP 026

Quality of life of mothers with babies under intensive care management in Teaching Hospital Karapitiya and Teaching Hospital Mahamodara, Sri Lanka

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Background: Babies are admitted to hospitals in early life with different conditions. Staying in the hospital can have an impact on the quality of life of mothers of these babies. WHOQOL-100 assesses quality of life under different domains. They are physical capacity, psychological, level of independence, social relationships, environment, and spirituality/religion/personal beliefs.

Aims: To assess the quality of life of mothers whose babies have been admitted for intensive care at early stage of their lives.

Methods: It is a hospital based descriptive cross sectional study. WHOQOL- 100 questionnaire was administered to 61 mothers whose babies were admitted to Teaching Hospital Karapitiya (n=34) and Mahamodara (n=27) during the month of July 2018 that was allocated to data collection. Data were analyzed using SPSS 20th version. One-way ANOVA and independent t-test were used to compare means between different groups.

Results: Mean values of quality of life scores were higher for all domains in employed mothers than in unemployed mothers. The score differences were significant (p<0.01 –0.001) in all domains except in the domain physical capacity. Quality of life mean scores were higher in mothers who do less professional jobs than other mothers. The differences were significant (<0.05) only in domains physical capacity (68.0±18.0, 57.5±7.6 and 48.8±14.2), social relationships (83.5±11.0, 67.5±12.6 and 70.8±3.8) and in the domain environment (62.3±7.4, 60.0±8 and 82.1±13). Quality of life mean scores were significantly (p< 0.05) higher in mothers belonging to extended families than mothers belonging to nuclear families.

Conclusions & Recommendations: Quality of life of mothers of babies admitted to the hospital was better when the mother is employed, engaged in less professional job and when the mother is from an extended family.

Keywords: *Quality of life, Mothers, Intensive care management*

PP 027

Usage of contraceptives and associated factors among postpartum mothers in the Medical Officer of Health area Nuwaragam Palatha East in Anuradhapura

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Background: Postpartum family planning contributes to prevent a number of maternal and child health related issues such as unintended pregnancies, unsafe abortions, preterm births, maternal and fetal mortalities and morbidities, leading

to positive outcomes in both maternal and child health. Only a few studies have been conducted on postpartum contraception in Sri Lanka in the past.

Aims: This study was conducted to assess postpartum contraceptive usage and its associated factors among postpartum mothers in the Medical Officer of Health area Nuwaragam Palatha East.

Methods: A community based descriptive cross sectional study was carried out among 196 mothers who attended to the selected well baby clinics within 12 months after delivery from 5 conveniently selected Public Health Midwife (PHM) areas out of a total of 20 . Structured pre tested self-administered questionnaire was used to collect data. Statistical Package for Social Sciences (SPSS) 20th version was used for data analysis. Chi Square test was used to assess associations.

Results: A majority of the mothers (67.9%, n=133) were using a postpartum contraceptive method. Among those mothers most commonly used method was intrauterine device (84.7%, n=166). Fear of side effects (36.5%, n=72) was the commonest reason for not using any contraceptive method. This study revealed that postpartum contraceptive usage was significantly associated with partner's educational status (p=0.035), number of pregnancies (p=0.013), number of living children (p=0.001), age of the youngest child (p=0.001), expectation to have more children (p=0.025), resumption of sexual activity (p=0.001) and having post-natal counselling (p=0.021).

Conclusions and Recommendations: Majority of postpartum mothers were using a family planning method, however, it is important to ensure all are protected from an unintended pregnancy. Since postnatal counselling on postpartum contraception was significantly associated with postpartum contraception usage, it is important to strengthen family planning counselling services.

Keywords: *Postpartum, Contraceptive, Anuradhapura*

PP 028

The risk factors for inadequate complementary feeding practices among infants aged 6 to 11 months in the Jaffna District: a community based case control study

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Background: Proper infant feeding practices contribute to healthier childhood and adult life. These are influenced by many factors related to the immediate caregiver and the infant. Proper understanding of modifiable factors influencing these complementary feeding practices are indispensable in ensuring optimal childhood growth and development.

Aims: To determine the risk factors for poor complementary feeding practices among infants aged 6 to 11 months in the Jaffna District.

Methods: A community based case control study was conducted using data from a cross sectional study conducted among infants aged 6 – 11 month infants in the Jaffna District in mid-2014. The data collected using a validated interviewer administered questionnaire were then used to identify the cases and controls. Cases were defined as caregivers of infants aged 6 – 11 month in the Jaffna district with inadequate feeding practice, identified by using the WHO complementary feeding composite indicator. Similarly, controls in this study were defined as caregivers of infants with adequate feeding practice. A total of 384, age and gender matched pairs of cases and controls were identified. Adjusted odds ratio using binomial logistic regression analysis was used to quantify the risk

Results: The mothers of the infants were the main caregiver among 89.1% of cases and 94.0% of controls with odds ratio 0.52 (0.31 to 0.88) and p-value of 0.01. Respiratory tract illness was reported among 12.5% cases and 7.0% controls with odds ratio of 1.89 (1.15 to 3.10) and p-value of 0.01. Caregivers with cultural beliefs of various effects of infant food items were found among 65.6% cases and 57.6% controls with odds ratio of 1.41 (1.05 to 1.89) with p-value 0.02.

Conclusions & Recommendations: Caregivers characteristics, their behavioural traits and respiratory illness during infancy of their infants were significantly associated with poor complementary feeding practices. Need context specific interventions to address these risk factors in this community.

Key words: *Infant feeding, Complementary feeding, Risk factors, respiratory illness, cultural beliefs*

PP 029

Maternal perception on obesity, its complications and gestational weight gain in pregnant women attending antenatal clinics in the De Soysa Maternity Hospital-Colombo, Sri Lanka

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Background: World Health Organization (WHO) has recognized obesity as one of the most important public health problems faced by the world today. The rates of overweight and obesity are rising to epidemic proportions globally, especially among women. Obesity is increasingly common in the obstetric population as well. Sri Lanka is not an exception in this regard.

Aims: To describe the maternal perception on obesity, their knowledge on complications of obesity in pregnancy and gestational weight gain

Methods: Hospital based descriptive cross sectional study was conducted among a systematic sample of 416 pregnant women registered for antenatal clinic care at De Soysa Maternity Hospital from 01st June to 31st August 2017. Pre tested interviewer administered questionnaire was used for data collection. Maternal BMI at booking visit was taken from the pregnancy record to assess the overweight/

obesity prevalence among the study population. Data were presented using percentages.

Results: Mean age of the study sample was 27 years (SD=5.146). Majority (n=241, 58%) were in their first pregnancy. Nearly one third (n=134, 32.2%) of the study population were overweight and 11.8% (n=49) were obese. Only 18.8% (n=78) had attended pre-pregnancy screening and 6.3% (n=26) did not even know there are such services. Fifty three percent (n=220, 53%) of overweight women identified themselves as such, but 45% (n=187) of them considered themselves to be of normal weight. Most of the pregnant women in the study sample (n=248, 59.6%) were unable to estimate the recommended weight gain in pregnancy. Seventy three percent (n=303, 73%) of women believed that excess gestational weight gain or obesity would be associated with increased pregnancy complications, however 17% (n=9) did not know anything about it and 10% (n=4) believed it would not lead to complications. Although 73% (n=303) gave positive responses, their knowledge on specific nature of these complications was poor.

Conclusions & Recommendations: Pregnant women's knowledge on obesity, gestational weight gain and its consequences were unsatisfactory. Bridging this knowledge gap and referring to medical nutritional therapy when indicated is highly recommended.

Key words: *Overweight, Obesity, Gestational Weight Gain, Maternal Complications*

PP 030

Facilitators and barriers of physical activity in prevention and control of Non-communicable diseases – a qualitative study in North India

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Background: There is an escalating burden of Non-communicable diseases (NCDs) in India. World Health Organisation (WHO) and government of India aim to reduce the physical inactivity relatively by 10%, as it is a modifiable risk factors for NCDs. Patients and general population are advised to do physical activity by doctors and other health personnel through individual counselling and group health talks in the community. But whether they can follow the given advice or the knowledge provided alone was sufficient to translate it in to practice has not been studied.

Aims: To explore the facilitators and barriers to physical activity in an urban resettlement colony in New Delhi (India).

Methods: Consecutive patients in the outpatient department (OPD) of our urban health centre were selected. Some in-depth interviews were conducted in OPD and some in the community (home and a community park). In total 14 adult participants (≥18 years) were interviewed until the theoretical saturation. The average time for the interview was 23 minutes. Verbal consent was taken from the participants to record the audio. A random visit was made to one of the residential colonies and a park to check the facilities. Interview contained open-ended questions and followed an interview guide. The audio was transcribed and the text was read multiple times for familiarisation. Quotations depicting facilitators and barriers for physical activity were identified. Following this, coding was done and meaningful themes were identified as thematic analysis.

Results: Knowledge regarding the benefits of physical activity was present in all the participants. Five participants (36%) were regularly doing physical activity in the form of exercise/yoga/gym/brisk walking. The facilitators identified were motivation, time management skills, knowledge and perceived benefits of physical activity, presence of disease and its management, a facility like a park/garden equipped with physical exercise equipment, convenient school timings. The barriers identified were lack of time, lack of indoor and outdoor spaces, lack of maintenance of parks/infrastructure, inadequate equipment for physical activity, unfavourable season/weather, physical restriction, unhealthy lifestyle and laziness. On our visit we found the poor maintenance of the open gym and inadequate space in the residential colonies.

Conclusions & Recommendations: We conclude that simply having knowledge about the benefits of physical activity is not sufficient to translate it to practice. There should be an enabling environment and well-maintained facilities in the community, schools. Timings of school/work and motivation also play a major role. At a personal level, motivation needs to come from within and needs to be persistent.

Key words: *Facilitators, Barriers, Physical activity, exercise, Prevention, Control, Non-communicable disease, NCD, India*

PP 031

Prevalence of Hypertension and NCD risk factors among population in south Indian tribal region

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Background: With the background of increasing trends of hypertension and other non-communicable diseases, it is imperative that, remote populations like tribal areas also to be assessed for their risk of non-communicable diseases. There is also evidence of higher occurrence of stroke in tribal areas.

Aims: The study was conducted to assess the prevalence and associated risk factors of hypertension in tribal area of south India.

Methods: A cross sectional study was done among 882 adult participants >18 years in the tribal area of BR hills tiger reserve forest, Chamarajanagar district of Karnataka. The multistage stratified cluster sampling methodology was adopted and a cluster was a village/hamlet (first stage: socio geographic strata and second stage: villages/hamlets, third: household). All the members in the household >18 years present were interviewed. Blood pressure was measured by the standard procedures. Details on physical activity, diet, family history were also taken along with socio demographic details. Data entry was done in Fulcrum app and analysis was done using SPSS 21.0. Chi square test, independent t test and Mann Whitney tests were used for analysis.

Results: The prevalence of hypertension in tribal area was 22.5 % (n=880). Around 52.3% (n=880) of study subjects were tribal. 175 (20.4%) of subjects had increased waist circumference. 21.4% of the subjects were overweight or obese. Age (OR=5.5, 95% CI: 3.8-8.0), BMI (2.7, 95% CI: 1.9-3.9), visceral fat (OR=2.9, 95% CI: 1.3-6.3), waist circumference (OR=2.6, 95% CI: 1.8-3.7) and Waist-to-hip ratio (OR=2.6, 95% CI: 1.9-3.6) were significant associated factors of hypertension. There was no significant difference between the tribal and the non-tribal prevalence

of hypertension. Salaried employees and self employed were having significantly higher prevalence of hypertension compared to house wife, casual labourers. Current tobacco users (OR=1.7, 95% CI: 1.2-2.4) and alcohol users were at risk of hypertension. Those with >5 standard drink (1 standard drink =10 g of alcohol and an amount of 5 standard drinks is high risk drinking as per WHO) had higher risk of hypertension (OR=2.7, 95% CI: 1.6-4.4). Almost 10% of subjects had high risk drinking pattern in this community.

Conclusions & Recommendations: It's high time to intervene, and act into the tribal area regarding hypertension, as there is high prevalence of hypertension and obesity. Study also recommends to setup surveillance for NCD in tribal areas to have timely action.

Key words: *Hypertension, Tribal area, Obesity, NCD*

PP 032

Prevalence, risk factors and health seeking behavior of selected non communicable diseases among medical officers attached to hospitals in the Colombo group (NHSL, LRH, DMH, CSHW and Eye Hospital)

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Background: Increasing trend of non communacable disease is becoming the major cause of mortality and morbidity in developed and developing world. The mortality rate from non communicable disease is currently 20-50% higher in Sri Lanka than in developed countries. About 65% of deaths in Sri Lanka are due to non communacable diseases. These non communacable diseases result from sedentary lifestyles, smoking, unhealthy diets, and excessive alcohol consumption.

Aims: To describe prevalence, risk factors and health seeking behavior of non-communicable disease among Medical Officers attached to hospitals in the Colombo group (NHSL, LRH, DMH, CSHW and Eye Hospital)

Methods: A Descriptive cross sectional study was carried out among Medical Officers attached to hospitals in the Colombo grid. A random sample of 164 Medical Officers was selected. Self-administered pre–tested questionnaire was used to collect data on risk factors and health seeking behavior of selected non communicable diseases among Medical Officers during the study period. Data were analyzed using SPSS 17 version. Health seeking behavior was assessed qualitatively.

Results: From this sample 59.8% (n=98) were female while 40.2% (n=66) were male and 75% (n=124) were between the ages of 34 to 51 and the mean age was 43. Out of all Medical Officers only 17.6% (n=29, FM=16, M=13) had diagnosed non communicable disease. Out of these 29 Medical Officers, more than 90% (n=26) used high amounts of oil, low level of exercise and very low level of vegetable consumption. All males who have non communicable diseases drink alcohol even once a month or more, but only

46 % (n=6) occasionally smoke. Forty three percent (n=24) without non communicable diseases consume alcohol once a month or more. There were significant association between having a non-communicable disease and high level of oil consumption (<0.05). Health seeking behavior was poor among who had non communicable diseases.

Conclusions & Recommendations: Prevalence and risk factors among Medical Officers in the Colombo grid hospitals were on par with the general population. Health seeking behaviors was poor among who had non-communicable diseases.

Key words: *Medical officers, Non communicable diseases.*

PP 033

Prevalence and knowledge of Hypertension among students of medical college of central Uttar Pradesh, India

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Background: Hypertension is one of the biggest health challenges. It eventually leads to target organ damage and cardiovascular diseases in later years of life. In recent years, it is seen that there is an increase in cases of hypertension in young adults, which is a major health concern.

Aims: To find out prevalence, risk factors and knowledge of hypertension among students of medical college of central Uttar Pradesh, India

Methods: It was a cross-sectional study. All medical students willing to participate were included in the study. MBBS admission batch 2016 and 2017 was chosen by lottery method. Students were interviewed using a questionnaire which included socio-demographic profile, risk factors and knowledge on hypertension which was followed by physical examination. Cut off value for hypertension was taken 140/90 mm Hg. The data analysis was done by applying chi square test using Microsoft excel and SPSS version 24. P value <0.05 was considered to be significant.

Results: The study involved 147 undergraduate medical students with an average age (SD) of 21.9 (2.2) years. The proportion of males was 57.8% (n=85). Knowledge about hypertension was poor, very good and excellent in 19.7% (n=29), 76.8% (n=113) and 3.4% (n=5) students respectively. Prevalence of hypertension was 17.01% (n=25). Mean systolic blood pressure (SD) was 127.07 (10.11) mmHg with a range 110 to 154 mmHg and mean diastolic blood pressure (SD) was 80.5 (6.587) mmHg with range 68 to 94 mmHg. There were 24 male and 4 female smokers, in which 37.5% (n=9) male smokers (p=0.057) and 50% (n=2) female smokers were hypertensive (p=0.01). Similarly, among 17 male alcoholics 29.4% (n= 5) were hypertensive (p=0.523) and out of total 4 alcoholic females 50% (n= 2) were (p=0.01) hypertensive. Out of total 64 non-vegetarian males, 29.7% (n=19) were hypertensive (p=0.014). Among 33 non-vegetarian females, 9.1% (n=3) were hypertensive (p=0.752).

Conclusions & Recommendations: Risk factors of hypertension among MBBS students are gender, smoking, alcohol consumption and these are similar to those in the general population of India. Prevalence of hypertension found in this study is more than India's National Family Health Survey-4. Further research is needed to ascertain the reasons.

Key words: *Hypertension, Medical Students, Risk Factors*

PP 034

Spatial pattern of prevalence and correlates of Asthma among Indian women : A Secondary Data Approach

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Background: Asthma is a one of the major respiratory diseases among adults in India. This study aims to find spatial pattern of prevalence and environmental, house hold correlates of asthma among Indian women aged 15 to 49 based on National Family Health Survey–4 data.

Aims: To find the correlates and spatial pattern of prevalence of asthma from NFHS-4 survey

Methods: The study is based on secondary data obtained from a cross sectional survey NFHS-4. Asthma was measured as present or absent using a single question. The total number of women aged 15 to 49 in NFHS-4 was 6,99,686 across 29 states in India. Alcohol consumption, obesity, type of cooking, wealth index, education attainment and place of residence along with geographical variables were used for finding risk factors. Spatial logistic regression using R software was used to determine associate factors. GeoDa software were used to identify hotspots and coldspots of prevalence of asthma. Odds ratio and 95% CI was used to for finding risk of association of each exposure with asthma

Results: From NFHS 4 survey, the prevalence of asthma was 1.6% (n= 11194). The asthma prevalence among people who are drinking alcohol was 2.4% (n=408), among people who use wood for cooking was 1.5% (6536), among obese people was 2.7%, among women with wealth index as richer 1.7%(n= 4510), among women living in urban area was 1.6% (3393). Andin education attainment the people who all were in incomplete secondary showed a prevalence of 1.5% (4594). The prevalence of asthma was high in Tamil Nadu (3.6%) followed by Kerala (3.4%) state and was least in Jarkhand (0.8%) state. Among the factors Wealth Index rich is having significant association with asthma with odds ratio 1.07 (95% CI=1.05-1.13). The overall prevalence of asthma has reduced from survey NFHS 3 to NFHS 4 i.e. from 2.3% to 1.6%. Hotspots were identified in Gujarat, Uttar Pradesh, Orissa and Karnataka. Among air pollutants in North eastern states PM2.5 has significant association with asthma prevalence. The same is identified as hotspots in Geoda software.

Conclusions & Recommendations: Asthma prevalence has decreased from NFHS 3 to NFHS 4. There is a significant association of wealth index, education level, alcohol consumption with asthma.

Key words: *Asthma, spatial distribution, of asthma, NFHS 4.*

PP 035

Implementation of single Non Communicable Disease (NCD) screening package at community level with multi-sectoral support utilizing local resources in selected Divisional Secretarial (DS) areas in Rathnapura district

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Background: Prevalence of both lifestyle and intermediate risk factors for NCDs are high in Sri Lanka. Moreover, services delivered at community level reduce direct and indirect out of pocket expenditure while increasing population coverage. Introduction of single package that covers all possible services is more successful instead of providing services by each vertical programme.

Aims: To implement a single NCD screening package to be delivered at community level with multi-sectoral support and utilization of local resources.

Methods: "Single package for non-communicable disease prevention" was developed by regional officers at Regional Director of Health Services (RDHS) office, Ratnapura under the guidance of RDHS. Health education and health promotion, cancer screening (Oral, Breast, Cervical and Thyroid), Cardiovascular risk screening (blood sugar, blood pressure and body mass index), Eye screening, primary oral health care package delivered through mobile dental clinic were the areas covered by the package. Advocacy was done with District and Divisional Secretaries (DS). First programme was done at each DS office with the support of field officers at DS office. Then the programme was continued in each GN division in the DS area.

Results: Hundred and six Grama Niladhari (GN) divisions were covered in four DS areas. Total number screened was 5828 and it was 17.8% out of annual coverage of Ratnapura district. Male participation was 21.09%. More than 40% of the male participants were betel chewers. Out of over 35 year old females, 235 (37.2%) participated to the well woman clinic in Nivithigala MOH area. Forty- two cataract surgeries were done to the patients identified from Ratnapura Pradeshiya Sabha division within two weeks after diagnosis.

Conclusions & Recommendations: Aforementioned screening package was conducted and delivered on the same day without any cost at point of service delivery to either clients or organizers which is very much cost effective. Well women clinic coverage was 3.1% higher than the National coverage following the implementation of the project.

Key words: *Non communicable diseases, Single service package*

PP 036

Preventing non communicable diseases with help of mobile application in a Sub-Himalayan Region of North India.

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Background: Noncommunicable diseases (NCDs) or chronic diseases, which are due to the result of a combination of genetic, physiological, environmental and behaviours factors annually lead to 71% of the total deaths globally. Out of these total deaths, 15 million premature deaths were between age group of 30 to 69 years and 85% of these deaths are from low and middle income countries. With the scope of saving premature deaths and burden on health system Govternment of Himachal Pradesh initiated the screening policy with the use of mobile application for digitalisation of data.

Aims: To identify risk factors for NCD and provide preventive as well as curative services to identified high risk population.

Methods: A detail project for screening all above 30 years of age was prepared by state programme officer and submitted to Govt. for approval. After approval from state Govt. a screening questionnaire was prepared by various experts at state level and pretested in a mobile app. After that all district NCD programme officers along with their field staff were trained to collect data along with measurements of blood pressure (BP), Random blood Glucose (RBS) level etc. Data were entered in the mobile application specially designed for this project. District Mandi, one of the 12 districts of Himachal Pradesh was the first to initiate screening.

Results: Within one year, in district Mandi, 1,33,111 people were screened with 53.95 % (n= 71811) contribution from females. It was found that 73.65 % (n=98034) were having risk factors for NCD. Around 15.26 % (n=20314) were found using tobacco products, 16.97% (n=22557) were found to be second hand smokers, 15.98% (n=21275) were consuming alcohol, 23.21 % (n=30892) were found physically inactive and 0.78% (n=1039) of the females were having some kind of abnormality in breast tissue. 36539 out of 1,33,111 were subjected to RBS measurement and 7.85% (n=2866) were found having increased level and 15.73% (n=5749) were found with increased blood pressure. We also noticed that 14.21 % (n=18919) of the population had family history of NCD.

Conclusions & Recommendations: Mobile app provided real time data obtained from screening population, which helped us to identify risk factors for NCD and move our resources as per need. Mobile technology also helped in better monitoring as well as supervision. Dependency on field staff for manual submission for reports was also addressed.

Key words: *NCD risk factors, Mobile Health, Premature Deaths, Health system burden.*

PP 040

Psychosocial problems and associated factors among women of reproductive age (15 Years to 49 Years) in Vavuniya Medical Officer of Health area

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Background: Psychosocial problems have become a major health concern for women worldwide. Despite it being a leading cause of health related disability in reproductive age groups, the mental health needs of reproductive age (15-49 years) women are still neglected and marginalized.

Aims: The present study was conducted to describe the psychosocial problems and factors associated with it among the reproductive age women (15-49 years) in Vavuniya Medical Officer of Health area.

Methods: A descriptive cross sectional study was conducted among 507 reproductive age women, in Vavuniya MOH area. A two stage cluster sampling method was applied to select eligible participants in conflict affected MOH area of Vavuniya. General Health Questionnaire -30 was used to assess the psychological distress. The data processing and analysis was performed by using Statistical Package for the Social Sciences 17th version (SPSS-17) software package.

Results: The non-Response rate was 20.2%. Overall prevalence of psychological distress among women in the sample was 29.2% (95% CI: 28.8%-29.5%). The results pointed out that majority were 30-34 years and were Tamils (85.5%). This study found that 5% (n=20) of the participants were suffering from gender based physical abuse by their close family members with 33.5% (n=134) suffering from anxiety and 3.2% (n=13) suffering from relationship problems. A statistically significant association with psychological distress were observed with lower level of education (x^2=13.77, p<0.001), higher income (x^2=17.768, p<0.001), traumatic life events such as forced displacement (x^2=19.487, p<0.001), loss of property during war (x^2=25.866, p<0.001) and family factors such as inadequate family support (x^2=13.248, p<0.001). Likewise, social factors such as social class (x^2=7.842, p<0.005), inadequate social support (x^2=3.865, p<0.03), living in a rental house (x^2=4.963, p<0.01) and access to healthcare (x^2=3.950, p<0.03) also showed statistically significant associations with psychological distress.

Conclusions & Recommendations: The overall prevalence of psychosocial problems among women of reproductive age in conflict affected Vavuniya MOH area is high. Therefore, reproductive health programmes need to acknowledge the importance of mental well -being of the reproductive age women especially in the conflict affected areas.

Key words: *Mental illness, Psychosocial, Forced displacement, Reproductive age*

PP 037

Utilization of microscopic centers for TB case detection in the district of Gampaha

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Background: Tuberculosis is a widespread infectious disease caused usually by Mycobacterium tuberculosis. In the district of Gampaha, seven microscopic centers are available for sputum smear testing which are District General Hospital Gampaha, District General Hospital Negombo, Base Hospital Wathupitiwala, Base Hospital Kitibathoda, Base Hospital Meerigama, Base Hospital Minuwangoda and District Hospital Diulapitiya. According to the Health Ministry sources in 2011, overall screening among all out patient department attendees for TB at all these centers was found to be less than 0.5%. It is timely to determine the utilization of seven microscopic centers in district of Gampaha to improve the system.

Aims: To describe availability of resources, feasibility, gaps, utility patterns and problems in utilization of seven microscopic centers in Gampaha district.

Methods: A descriptive cross sectional study with a qualitative component was carried out in seven microscopic centers in Gampaha district. One data sheet was filled for each microscopic center at above 7 hospitals. Seven focus group discussions were carried out in each microscopic center with the relevant consultants, Medical Superintend, medical officer in chest clinic, 2 medical officers from outpatient department, one public health lab technician and one pharmacist.

Results: Average sputum samples per one public health lab technician per month ranged from 24 to 139 in seven microscopic centers in Gampaha district. There were adequate slides, relevant regents and other facilities available in seven microscopic centers. Availability of registers and maintenance was satisfactory in all microscopic centers. There are no microscopic assistants or minor staff in any of the microscopic centers in Gampaha district for the assistance of public health lab technician. Fifteen percent of the OPD patients had not completed the three samples in sputum testing. Average positive patients from different microscopic center ranged from 0 to 4.6. From focal group discussions, the importance of improving the number of sputum testing in all of the hospitals in Gampaha district was emphasized.

Conclusions & Recommendations: Average samples per one PHLT per month and the number of TB positive patients were very low in Gampaha district. Utilization of the PHLT needs to be improved in the future to strengthen the TB case finding.

Key words: *TB, Microscopic centers, Case detection*

PP 038

Statistical modelling of Dengue incidences and climatic variables in India

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Background: Dengue fever is a vector borne disease transmitted by Aedes aegypti mosquitoes. These mosquitoes prefer to breed in artificial containers like tanks, discarded containers, junk materials which stagnate water for more than a week. These mosquitoes are day biting and prefer to rest on dark areas inside the houses and are very hard to find. Clinical picture of Dengue will vary from simple viral fever to its severe form Dengue Shock Syndrome (DSS) which can threat the person's life. As per WHO fact sheet, recent estimate of dengue incidence is 390 million per year throughout the world. In 2015, Delhi, India recorded its worst outbreak over 15000 cases.

Aims: To develop a model that identifies and quantifies the relationship between dengue incidences and selected climatic variables (annual rainfall and average temperature) and to identify hotspots of dengue incidence in states of India.

Methods: Data required for the study were collected from www.indiastat.com. The expected dengue incidences were modelled using negative binomial regression with states as random effect and covariates as climatic variables and year. To identify the spatial clustering of dengue incidences, appropriate spatial clustering algorithm was used. To assess the spatial clustering of dengue incidences, Local indicator of spatial association (LISA) was used. The hot spots for dengue incidence in states of India were determined using open source software GeoDa or SatScan.

Results: The regression coefficient of average temperature was found to be 1.12 (95% CI 0.97-1.29, p = 0.13) and the regression coefficient for annual rainfall was found to be 1.004 (95% CI 0.99-1.01, p = 0.11). From the spatial analysis, Karnataka, Kerala and Tamilnadu were found out to be hotspots of dengue incidence in India.

Conclusion: It was found that there is no association between the dengue incidences and climatic variables namely average temperature and annual rainfall in India after evaluating 2008 to 2017 data.

Key words: *Dengue incidence, Negative Binomial Regression, Spatial analysis, Hot spots, Local indicator of spatial association (LISA).*

PP 039

Maintaining a community cohort to determine the incidence and serotype distribution among dengue patients in Kolonnawa MOH area in Colombo District.

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Background: Dengue infection results in mortality and heavy burden of morbidity therefore dengue is considered as one of the priority public health problems. Hence, estimating full burden by accurate incidence level is of utmost importance.

Aims: To determine the incidence of acute febrile illness due to laboratory confirmed dengue in the study population of MOH Kolonnawa in Colombo District

Methods: This community-based cohort study was commenced on 1st June 2016 and the study period is approximately 2 years per subject. 2004 subjects were enrolled from 513 randomly selected households in 6 randomly selected Grama Niladhari divisions in Kolonnawa MOH area. To detect acute febrile illness cases, Research Assistants contacted each participating family weekly by doing home visits and telephone calls. Suspected dengue cases who had fever (body temperature>38°C / >100.4°F) on >2 consecutive calendar days were asked to visit for detailed physical examination and serum samples for NS1, hematology and Reverse Transcriptase quantitative Polymerase Chain reaction (RT-qPCR).

Results: From June 2016 to April 2019, there were 278 acute febrile cases recorded, among those 245 cases match the criteria of dengue fever. From that 39 NS1 positives and 46 RT-qPCR positives were detected. From positives, (8.7%) 4 cases of DENV1 (Serotype 1) and (91.3%) 42 cases of DENV2 (Serotype 2) has been identified. Among RT-qPCR positives, there are 22 females and 24 males. Out of those positives, 33 cases were below 18 years and 13 cases were above 18 years.

Conclusions & Recommendations: This study will provide information about the incidence of dengue cases and help to observe the epidemiological pattern in the study area.

Key words: *Dengue, Incidence, Serotypes dengue, Incidence, Serotypes*

PP 041

HIV Surveillance among return migrants in the Northern and Eastern Provinces of Sri Lanka

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Background: Sri lanka is a low prevalence country for HIV. The geographic location and growing tourist industry with open economy of the country put Sri Lanka into high risk for a probable epidemic through migrants. This warrants for a surveillance of HIV among migrants especially in North and Eastern provinces of the country**.**

Aims: To assess the prevalence of HIV, knowledge, and usage of condoms and to assess the association between knowledge of condoms and prevalence of HIV among return migrants.

Methods: The study was a community based cross-sectional analytical study among 1609 returning migrants aged between 18-65 years, in all nine districts of Northern and Eastern Provinces. Participants were recruited by respondent driven sampling (RDS), by identifying seeds in certain locations. The sample was selected proportionate to the size of the population in each district. Interviewer administered questionnaire was used to assess the prevalence, socio-demographic variables and knowledge on condoms. Data analyzed using SPSS 21 and presented with frequency distributions and cross tabulations.

Results: The prevalence of HIV among returned migrants were 0.17%, where only two samples were positive for HIV. These two samples were from Jaffna indicating a 1.6% prevalence in Jaffna district. Zero prevalence was indicated in other districts. The study revealed that only 71.2% (n=785) has seen a condom and 28.8% (n=317) has not even seen a condom. Majority 61% (n=672) has not ever used a condom and only 8.8% (n=97) used a condom during last sex. It was revealed that only 15.5% (n=171) used condom regularly. Only 62.8% (n=692) participants knew that condom usage will protect against HIV, and it was revealed that 41.2% (n=454) did not know that condoms have an expiry date and 24.8% (n=273)were uncertain whether condoms are reusable or not. Associations between knowledge on condoms and HIV prevalence could not be assessed due to the extremely low prevalence of HIV and condom usage.

Conclusions & Recommendations: Study revealed a low prevalence of HIV and low knowledge on condoms among migrants. Study recommends comprehensive sexual education programs to the migrants before leaving and on arrival to the country.

Keywords: *Return migrants, HIV, Condom*

PP 042

Interim Evaluation of Dengue Pathfinder: A Real-Time Web-Based Field Dengue Control e-Surveillance System Piloted in Galle District

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Background: Dengue is a public health problem in Sri Lanka and surveillance is a critical component of any dengue prevention and control programme. With the escalating Dengue epidemic in the country, several delays and gaps in the existing surveillance systems have been highlighted. Dengue Pathfinder is an innovative software that complements the existing paper based and online system DenSys and is currently being pilot tested in the Galle District.

Aims: To evaluate the Dengue Pathfinder by comparing it to the existing Dengue surveillance systems in the Galle District.

Methods: This study was conducted in three steps. The first step was a desk review to compare and contrast the existing surveillance systems. The second step was a cross-

sectional descriptive study to assess the notification data on all reported Dengue cases from 1st October 2018 to 31st December 2018, in the two pilot-tested MOH areas. The third step was a focus group discussion with the stakeholders involved in the pilot study to identify the user-friendliness and the effectiveness of the Dengue Pathfinder.

Results: Desk review revealed several advantages of the Dengue Pathfinder over the existing Dengue surveillance systems. These include universal notification system, real-time tracking of field Dengue control activities, instantaneous generation of reports on field activity including the geo details of the case viewed by the Google maps and the availability of the entomological data on the same application. In the Descriptive cross-sectional study the average time from the date of admission to the date notification from the Hospital is 5 days for H544 system, and 3 days for DenSys and Dengue Pathfinder. Due to the limited number of cases reported during the study period statistical analysis of data was not done. The FGDs revealed the perceived opinion of the users. According to the user's perception, the Dengue Pathfinder is user-friendly and also very efficient compared to the routine systems due to universal notification and its ability to incorporate field Dengue control activities.

Conclusions & Recommendations: The Dengue Pathfinder has gained preference among its users and it is an advanced surveillance method that combines Dengue notification, Dengue control activities in the field and entomological surveillance. It is recommended to complete the pilot study and generate more evidence in order to extend the use of the Dengue Pathfinder in the other MOH areas.

Key Words: *Dengue Surveillance, Dengue Pathfinder, DenSys,*

PP 043

Role of tobacco smoking in emergence of Diabetes among Tuberculosis patients: An analysis on Indian Tuberculosis patients.

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Background: Tobacco is one of the established risk factors for Non Communicable Diseases (NCDs) and India has around 28.6% of current tobacco users. Evidence suggests association between tobacco smoking and Tuberculosis (TB) in some populations.

Aims: To evaluate the role of tobacco smoking in emergence of diabetes among TB patients of district Kangra.

Methods: The cohort study of 400 patients with TB from district Kangra, Himachal Pradesh was carried out in 2015-16. In this analysis the demographic details of TB patients above the age of 18 years were included along with history of tobacco smoking in forms of bidi and cigarette. The criteria used for diagnosing type 2 Diabetes Mellitus (DM) were American Diabetes Association criteria or with a diagnosed history of DM and or on oral hypoglycemic drugs/ insulin. The MDR-TB patients and patients suffering from type 1 DM, HIV and leprosy were excluded from the study. The patients were followed up till the end of their treatment. Chi square test was used to test the differences between the two groups. Multinomial Logistic regression analysis was applied to identify predictors of TB.

Results: At the time of diagnosis of TB 34% (136/400) were current smokers of any form of tobacco and 18.5% were ex-smokers. The mean duration of bidi/cigarette smoked among current smokers was 25.88 ($\pm$12.76) years. 23% of ex-smokers and 12.5% of current smokers developed diabetes during the course of TB treatment (p=0.03). DM was diagnosed among 13.5% of TB patients. Multinomial logistic regression with diabetes as dependent variable showed that risk of development of diabetes was 18% higher among ex smokers as compared to non smokers (OR; 95%CI: 1.18 (0.05-27.02), p>0.05). However it did not emerge as an independent predictor of diabetes.

Conclusions & Recommendations: Tobacco is a risk factor for diabetes but other factors like alcohol consumption, BMI and family history also play a major role.

Key words: *DM-TB, Tobacco, Association*

PP 044

Vitamin D supplementation of children with cerebral palsy, followed up in tertiary care children's hospital in Sri Lanka.

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Background: Vitamin D deficiency or insufficiency is 93% among children with cerebral palsy (CP), while 51% in normal paediatric population. Supplementation of adequate vitamin D is recommended in children with CP to reduce risk of fractures and maintain bone mineral density.

Aims: To find the practice of prescription of vitamin D supplementation to the children with cerebral palsy in tertiary care children's hospital in Sri Lanka.

Methods: A retrospective study was done to find out the practice of vitamin D supplementation from a convenient sample of 50 children who were diagnosed to have CP with gross motor function classification system (GMFCS) level 5. They have been followed up in rheumatology clinic in Lady Ridgeway Hospital for Children, Colombo, Sri Lanka. Data were collected from clinic records. Reason for not on vitamin D supplementation and reason for not requesting vitamin D status were questioned from caregiving medical professional. Level of expected performance was taken as 80% due to limited resources.

Results: In this study 28% (n=14) of children were on vitamin D supplementation while the rest 72% (n=36) was not on supplementation. Children, who have not been on vitamin D supplementation, were due to non-prescription by medical professionals and non-availability of required doses of vitamin D preparations in hospital. All children in this sample were not assessed for vitamin D status due to lack of knowledge of medical professionals and non-availability of facilities to assess vitamin D status.

Conclusions & Recommendations: Vitamin D supplementation and assessment of vitamin D status is poor and did not meet the expectation in this study. Education of medical professionals on importance of initiating vitamin D supplementation to all children diagnosed to have CP with GMFCS 5 will be beneficial. Facilities for assessment of vitamin D level should be provided for this population.

Key words: *Vitamin D supplementation, Cerebral palsy*

PP 045

Improving nutrition outcomes for children in Sri Lanka's estate sector: The positive deviance approach

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Background: Positive deviance is the observation that in most settings a few at risk individuals follow uncommon, beneficial practices and consequently experience better outcomes than their neighbours who share similar risks. Application of this approach would be beneficial for the communities where nutritional status is very poor such as the plantation sector.

Aims: To explore practices and behaviors of mothers and caregivers that enable them to achieve better nutritional outcomes in their children aged 6 to 59 months who show normal growth compared to children with poor growth in the same neighborhood of the plantation sector.

Methods: Study was conducted in 2 estates in Nuwara Eliya district on a purposive sample of children aged 6-59 months comprising two categories – positive deviant (PD) and non-positive deviant (NPD) families. The PD children were those 'well-nourished' having an adequate height for age (height-for-age Z score>0). The NPD were the stunted children (height for age <-2). A qualitative study was conducted using 17 focus group discussions, 43 in-depth interviews and 17 key informant interviews with mothers, fathers, and other caregivers. The health care providers and child development officers were also interviewed. Data analysis compared findings of two groups (PD and NPD) based on UNICEF conceptual framework.

Results: Well-nourished children had optimal breastfeeding and expressed breast milk and introduced variety of food in appropriate time and animal proteins early in contrast to undernourished children. Well-nourished children had better family support (father and grant parents). The PD families demonstrate active involvement of fathers, utilize health services optimally and have frequent contact with health care providers, seeking information from multiple sources proactively, smaller family size, sufficient funds to purchase food and mothers responsible for cash management. The PD families had minimal spending on alcohol at households.

Conclusions & Recommendations: Study identified several positive practices and behaviors to achieve better nutritional status of children. These findings can be used to develop and implement interventions to improve nutrition outcomes of children in estate sector.

Key words: *Positive Deviance, Estate Sector, Child Nutrition*

PP 046

Association between circulating odd-chain saturated fatty acids and arteriosclerosis among patients with diabetes, dyslipidemia, or hypertension in Sri Lanka and Japan

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Background: The differences in the morbidity and mortality of cardiovascular diseases between Sri Lankan and Japanese populations might be explained by the differences in their diet, especially fat content and composition and associated atherosclerosis .

Aims: To test the hypothesis that the serum fatty acid (FA) compositions differ between Sri Lankan and Japanese populations and that high concentrations of n-3 polyunsaturated FAs and linoleic acid are associated with a low level of arteriosclerosis.

Methods: This is a comparative cross sectional study involving Sri Lankan and Japanese population attending tertiary care institutions. The study participants were patients with diabetes, dyslipidemia, or hypertension in Sri Lanka (n = 100) and Japan (n = 236). The research staff conducted an interview-guided questionnaire-based survey, blood sampling, cardio-ankle vascular index (CAVI) test, and anthropometric measurements of these participants. Serum FA compositions were measured by gas chromatography. Arterial stiffness was measured using Vasera 1000 machine and obtained the CAVI test. Analysis of covariance was used to compare the FA compositions between the populations. Multiple regression was used to assess the association between each FA and CAVI levels.

Results: The concentrations of myristic, γ-linolenic, dihomo-γ-linolenic, and arachidonic acids were higher in the Sri Lankan patients than in the Japanese patients. In contrast, the concentrations of linoleic, α-linolenic, and eicosapentaenoic acids were higher in the Japanese patients than in the Sri Lankan patients. Although no associations of n-3 polyunsaturated FAs and linoleic acid with CAVI were observed in both patient populations, odd-chain saturated FAs (pentadecanoic and heptadecanoic acids) were significantly inversely associated with CAVI levels in the Sri Lankan (p for trend = .03)

Conclusions & Recommendations: Sri Lankan dietary pattern which results odd-chain saturated FAs in serum might be inversely associated with atherosclerosis in this selected high CVD risk Sri Lankan population but not the Japanese patients and this may be partially explained high CVD mortality in Sri Lanka.

Key words: *Circulating FA, Diabetes, CVD*

PP 048

Undernutrition among under-five children in Uttar Pradesh, India: A comparison of modelling techniques

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Background: Under-nutrition among under-five children is a serious public-health problem in the World. Worldwide, 159 million children under-five years of age were stunted (low height-for-age) in 2015 In Uttar Pradesh, the most populous state of India, about half of the under five children are stunted, 40% are underweight (low weight-for-age) and 18% wasted (low weight-for-height). Owing to tremendous variability in nutrition outcomes across the country, state-level analyses are critical for understanding the complexities of undernutrition.

Aims: To compare conventional multivariate modelling techniques with the quantile regression model to examine factors affecting undernutrition among under-five children in Uttar Pradesh.

Methods: Unit-level data on 36,465 children aged 0-59 months taken from the National Family Health Survey (NFHS- 4), 2015-16 has been used for the study. Statistical analyses were performed using STATA 14.0 and R 3.5.3software. Quantiles for response variables were fixed according to prevalence of undernutrition. Quantile regression model (QRM) was fitted to model differential effect of significant covariates on the conditional distribution of response variables. QRM was compared with the conventionally used Ordinary Least Square (OLS) Regression. Further, Additive quantile regression model was also fitted to model linear & non-linear effects of significant covariates on entire conditional distribution of response variables. A penalty method, quantiles smoothing splines was used to estimate smooth linear and non-functions in the model.

Results: Results showed that most of the covariates were seen exerting differential effect on the conditional distribution of the response variable. Conventional OLS overestimated the effect of the covariate towards the lower ends and underestimated towards the higher end.

Conclusions & Recommendations: Upon comparing results with traditional logistic and linear regression models, it was found that for variables like undernutrition where extreme quantities are of interest than analysis of means, quantile regression method may be preferred.

Key words: *Undernutrition, Quantile regression modelling, Splines, Conditional distribution*

PP 049

Adherence to medical nutrition therapy provided to medical clinic attendees with diabetes mellitus in pregnancy in De Soyza Maternity Hospital, Sri Lanka

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Background: Medical nutrition therapy (MNT) is the cornerstone in management in diabetes in pregnancy (DIP). In spite of nutritional education by diabetes educating nursing officer (DENO), poor adherence to MNT is observed.

Aims: To describe whether the prescribed Medical nutrition therapy is adhered by the patients and to improve the quality of MNT provided to females with diabetes in pregnancy attending medical clinic in De Zoysa Maternity Hospital, Sri Lanka.

Methods: Convenient sample of 60 diagnosed females with DIP were selected from medical clinic in De Soysa Maternity Hospital, who were on MNT. Data were collected from face to face intervews using a pretested questionnaire. Attendees were asked about adherence to MNT in regard to carbohydrate servings, mixed diet to each meal, adequacy of proteins, late night snack and intake of source of monounsaturated fatty acid daily. The adherence to above parameters of MNT were taken as outcome measures of health care delivery. The reason for non-adherence was inquired to find out the patients' perspective on factors contributing non-adherence to MNT.

Results: Majority (98.3%, n=59) adhered to the concept of glycaemic load. The intake of mixed diet has been practiced by 75% (n=45) whereas adequacy of protein intake was observed among 75% (n=45) and late night snack among 78% (n=47). The monounsaturated fatty acid (MUFA) intake was very low among them 18% (n=11). The reasons identified for inadequate protein intake, late night snack, mixed meal and MUFA intake were as follows: 1. Poor knowledge of the importance of food on glycaemic control in spite they have received education; 2. Not received education by DENO'; 3. Poor self-discipline of females with DIP or social reasons.

Conclusions & Recommendations: There are some issues of adherence among mothers with DIP. Periodical training of DENO to update their knowledge and increasing the availability of nursing officers will be helpful in delivering a better service.

Key words: *Medical nutrition therapy, diabetes in pregnancy*

PP 050

Patient satisfaction and wastage on meals provided at Teaching Hospital Anuradhapura 2018

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Background: All government hospitals in Sri Lanka provide free meals to in-ward patients according to General Circular 01-21/2015 "Hospital Diet Circular" (HDC). Patients receiving proper nutrition during hospital stay have shown better prognosis in many clinical conditions.

Aims: To identify the percentage of wastage and patient satisfaction of the hospital meals in TH-Anuradhapura.

Methods: A hospital based descriptive cross sectional study was conducted on two randomly selected days in TH-Anuradhapura in December 2018. All ICUs, obstetrics, paediatric and psychiatric wards were excluded. Patients who were able to eat solid food and being admitted for over 24 hours were randomly selected out of the remaining 30 wards to obtain a sample of 500. Data were collected into pre-tested data collection forms by trained data collectors. Patients' satisfaction was assessed by a smiley scale. The food leftover on plates of the selected patients were weighed for rice, vegetable and protein-foods separately and calculated for the total diets ordered. The food left on trolleys were weighed similarly.

Results: Response rate was 91.8% (n=461). Diets were ordered for 403 patients for all main meals, but 41.4% (n=167), 44.7% (n=180) and 41.9% (n=169) were not obtained by patients for breakfast, lunch and dinner respectively. From 274 plates that were available for weighing, wasted leftover food was as follows: rice 30.3% (n=19.3kg), vegetable 16.7% (n=6.6kg) and protein-foods 9.6% (0.9kg). Total wastage of meals (plate & trolley wastage) calculated for all 1044 diets ordered from selected 30 wards were, rice 41.5% (n=101.7kg), vegetable 29.5% (n=43.9kg) and protein-foods 15.3% (n=5.5kg). From 461 respondents, 55% (n=253) of patients were unsatisfied while only 13%(n=60) were happy about the hospital diet. Regarding the qualities of meals 67% (n=309), 52% (n=240) and 60% (n=277) of patients were unsatisfied about the taste, appearance and smell of food. 31% (n=143) didn't like the way it was served. 87% (n=401) patients liked, if they were offered 2 menu options to select from.

Conclusions & Recommendations: HDC should be revised to improve patient satisfaction and minimize wastage of hospital meals, while innovative activities are needed to improve quality of hospital diet and the process of ordering and serving diets.

Key words: *Patient, Satisfaction, Wastage, Meals, Anuradhapura*

PP 051

Diet, diet related habits and selected associating factors for the disease in heamorrhoid patients attending to surgical clinics, General Hospital Ratnapura

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Background: Haemorrhoids/piles are a common disorder among adults. Population prevalence of haemorrhoid is calculated to be 4.4% in UK with highest incident rate reported in 45-65 years of age in both sexes. There are hardly any studies found in Sri Lanka on heamorrhoids including dietary habits while dietary modification being a major modality of non-surgical management. Most of the time, clinician spend a little time to assess the dietary habits of the patient in a busy clinic setting and the advices are rarely tailor made for individual patient.

Aims: To identify dietary habits and selected factors associate with heamorrhoids in patients attending to surgical clinic, T..H. Ratnapura

Methods: A clinic based descriptive study was conducted using a pre-tested, structured interviewer administrated questionnaire. 224 Haemorrhoid patients attended to surgical clinic with confirmed diagnosis was questioned over 6 months duration in the latter half of 2017. Information on socio-demographics, disease and diet was collected after obtaining informed written consent.

Results: Majority of the sample were males (59.4%) while female being averagely young (mode age lies in 60-70 age group in males and 40-50 age group in females). Consumption of rice, wheat flour-based foods, low fiber vegetables, dhal/potatos, sweet and fish showed a statistically significant difference between two sex with favorable consumption by females (p value <0.05 in each). Consumption of water was higher in males (85% male drinks >2L of water) with p<.004. Consumption of alcohol were 40.6% and smoking was 23.3% among males while no female consumed either of them.

Conclusions & Recommendations: Bad food habits were more common among males while they are having better consumption of water. It is difficult to describe whether habits were improved after the disease. Further studies are needed with comparing food habit of haemorrhoid patients to general population.

Key words: *Diet, Diet related habits, Heamorrhoid patients*

PP 052

Screen time and associated sleep outcomes among undergraduates at University of Sri Jayewardenepura

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Background: Television viewing, internet use and video game playing are collectively called Screen Time. Today, screen time usage has become a global challenge as it is associated with various health and behavioural problems. Also it has adversely affected daily routines, social behaviours, emancipative values, family relations and social interactions. Previous studies indicated that screen time is associated with poor sleep quality and sleep latency (amount of time taken to fall asleep). These problems, among university students, can even disturb or distract the education at the university and can lead to a poor health status.

Aims: This study was aimed to estimate the screen time and to determine the associated factors for sleep problems among undergraduates at University of Sri Jayewardenepura.

Methods: This descriptive cross-sectional study was conducted among 430 participants by convenient sampling in selected 4 faculties of University of Sri Jayewardenepura. A self-administered questionnaire was used to collect data related to personal information, screen time and screen time associated sleep outcomes. Data were analysed with descriptive statistics using statistical software (SPSS version-20). Categorization of the continuous variables were based on the median values of the score.

Results: Of 430 participants 74.4% were female. The average age of the participants (SD) was 23.79 (1.68) years with an overall range between 21 and 36 years. The mean screen time on weekday (SD) was 315.8 minutes (256.24) while the mean screen time per weekend day (SD) was 456.5 minutes (294.26). Screen time rates were slightly below on weekdays compared to weekends. More than half of participants (n=430, 59.5%) had a sleep duration less than 7 hours and nearly half of participants (n=430, 44.4%) had a sleep latency of 30 minutes or more. Excessive screen time, excessive usage of social media and using more than two screen devices were significantly associated with sleep latency over 30 minutes (p<0.05). Excessive screen time and excessive use of internet on weekends were significantly associated with trouble falling asleep often (p<0.05). Excessive usage of internet on weekdays was significantly associated with feeling excessively or overly sleepy often during the day (p<0.05).

Conclusions & Recommendations: University students have considerably high screen time on both weekdays and weekends. Findings indicate that higher levels of screen time and spending excessive time in internet have influenced sleep quality and higher sleep latency. Adverse effects of excessive screen time need to be minimized by using strategies to make university students aware in order to prevent such effects that leads to poor health status.

Key Words: *Screen time, Sleep, Sleep-latency, Undergraduates*

PP 053

Improvement in the utilization of reproductive and child health (rch) services through male participation among the saharia Tribes in Gwalior District, Madhya Pradesh

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Background: There has been a growing consensus among policy makers, programme personnel, researchers and health practitioners across the globe that male's involvement has been a key facilitating factor to women's reproductive health. Male involvement in reproductive health is a complex process of social and behavioral change that requires men to play a more responsible role towards it.

Aims: Development of behavior change communication (BCC) model for improving the male participation in utilization of maternal and child health care services under RCH programme and to test the feasibility of the BCC model developed.

Methods: There were 4 blocks in Gwalior district which are Saharia dominated. Two blocks, viz, Baria-Ghategaon and Dabra were selected for the study, which are geographically well distinct. Three villages from each of the selected blocks were selected by two stage stratified cluster random sampling. In the selected villages, couple interviews, male and female Focussed Group Discussions (FDGs) and key informant interviews (KII) were conducted to assess the RCH services utilisation, male involvement in it and barriers and facilitators of male involvement. Also their suggestions were recorded to improve the male involvement. The couples, who had given birth to a child within 5 years from the date of interview were selected for couple interview. On the basis of the couple interviews, FGDs and KIIs, a community viable BCC model was developed and its feasibility was tested.

Results: From two block, Ghategaon and Dabra, 400 couple interviews, 8 FGDs and 8 KIIs were conducted. The findings suggest that, the level of RCH services utilisation among the Saharia tribes is very low. Male in general were not aware about the Antenatal Care (ANC) /Post Natal Care (PNC) services being provided by the government. Institutional deliveries were very few. Male participation was negligible in maternal and child health. BCC model for improvement of male participation in RCH services utilisation was developed, piloted in one of the village, separate from that selected for the couple interviews. Feasibility study of the BCC intervention package in a

village showed its acceptability, possible integration with the existing programme and also showed the short term impact of the intervention.

Conclusions & Recommendations: Utilization of RCH facilities is not satisfactory among the tribal population which is around 20% only. To improve the utilization of maternal and child health care facilities, there is a need to make aware the masses about the need and benefits of these health care facilities. Suggest RCH programme to include a module of male participation also.

Key words: *RCH services, Male involvement, Behaviour Change communication model, feasibility*

PP 054

Factors associated with problematic internet use among young working adults in Gampaha, Sri Lanka

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Background: About 15% (n=3,047,351) of the Sri Lankans were internet users in year 2011, which has doubled by year 2016 to 29.3% (n=6,087,164). There is a growing concern over behavioural addiction to internet.

Aims: To identify problematic internet use and factors associated with it among working adults aged 18-34 years

Methods: A community based descriptive cross-sectional study was carried out among 1104 working adults of any field aged 18-34 years living in Gampaha district. Self-administered questionnaire, including Young's Internet Addiction test was used. A multistage cluster sampling method was adopted for data collection including divisional secretariat divisions, 'grama niladari' divisions and households. Associations were assessed using prevalence odds ratios (OR) and logistic regression.

Results: Study participants consisted of 576 (52.2%) males. Male gender (OR=1.59, CI:1.15-2.22), being unmarried (OR=2.32, CI:1.69-3.22), 18-29 age category (OR=1.59, CI:1.13-2.25) were the demographic factors significantly associated with problematic internet use. Among behaviour related factors, being a problematic mobile phone user (OR=7.05, CI:4.95-10.04), using internet for more than 5 years (OR=1.51, CI:1.09-2.08), age ≤ 19 years at initiation of internet use (OR=1.49, CI 1.08-2.05), using internet to create new friends (OR=2.85, CI:1.89-4.29), smart phone user (OR=2.04, CI:1.29-3.23), using internet more than one hour during a weekday (OR=2.43, CI:1.75-3.44), and weekend (OR=3.54, CI:2.56-5.26) were significantly associated with problematic internet use. Anxious when speaking face to face (OR=2.19, CI: 1.48-3.22), low agreeableness (OR=1.88, CI:1.34-2.66), not satisfied with family (OR=2.78, CI:1.72-4.54), not happy with self (OR=4.54, CI:2.43-9.09), recent stressful event (OR=2.17, CI:1.44-3.26) and impulsiveness (OR=2.54, CI:1.82-3.53) were the emotional factors significantly associated with problematic internet use.

In multivariate analysis, being unmarried (OR=1.76, CI:1.18-2.61), problematic mobile phone use (OR=5.76, CI:3.89-8.55), using internet for more than 5 years (OR=1.55, CI:1.05-2.29), using internet more than one hour during

weekend (OR=3.01, CI:2.04-4.44), creating new friends via internet (CI:2.37, CI:1.49-3.76), low agreeableness (OR=1.79, CI:1.20-2.67), unhappy about self (OR=5.25, CI:2.46-11.23) and impulsiveness (OR=1.67, CI:1.13-2.46) were significantly associated with problematic internet use.

Conclusions & Recommendations: Behavioural and emotional factors with unmarried status were the predictors of problematic internet use. There is a need to vigilant on internet use among emotionally deprived individuals.

Key words: *Problematic internet use, Internet addiction test, Sri Lanka*

PP 055

Learning medicine through community engagement: A programme to enhance learning experience of medical undergraduates in Sri Lanka

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Background: The Community Stream is one of the five teaching streams of the Undergraduate Medical Curriculum of the Faculty of Medicine, University of Colombo. Community engagement is taught mainly through the residential community attachment programme carried out in a rural setting in Sri Lanka.

Aims: To carry out a programme to develop knowledge, skills and attitudes of medical undergraduates related to health promotion and disease prevention at community level through community engagement.

Methods: A novel programme was developed with a student guide. The programme is structured in two phases: a two-day orientation programme and a 9-day residential programme in Embilipitiya MOH area in Ratnapura district. The activities include community visits, health visits, discussions, a health promotion camp, and an evaluation. A batch of 200 undergraduates visit the community in groups of 15 with a tutor. During the visits, student carry out a community dialogue, collect information, and perform active learning tasks based on the prioritized problems in the community. Students are exposed to different levels of health facilities, field clinics, public health field activities and occupational settings. This programme has been implemented for every batch since 2014 todate. Student performance was formally assessed, and feedback regarding the programme was obtained from students and staff.

Results: Engaging the community, building rapport and assessment of health needs and factors influencing health were leaning opportunities to arrive at a community diagnosis. Each group had the opportunity to present their findings to a panel of regional and divisional health staff of Embilipitiya which enhanced their analytical and soft skills. The students designed an interactive behavioural change communication activity. This programme enhanced student learning in a stimulating environment, mobilized regional

health staff as trainers, involved faculty and extended faculty, promoted health literacy and skills in school children, and enhanced public health services in the area.

Conclusions & Recommendations: Learning medicine through community engagement is a unique opportunity that the students receive, and this activity was sustained for six years highlighting the recognition by students, staff, regional health services and the community.

Key Words: *Community engagement, Medical Undergraduates, Community Stream*

PP 057

Tobacco use: Perceptions and associated factors in army soldiers

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Background: Tobacco use notoriously results in severe health and socio-economic repercussions. The fitness and combat readiness can be significantly impaired in tobacco using military personnel. To maintain the standards of the Sri Lanka army at the highest degree, it is critical that the optimum physical performance as well as the health and wellbeing of soldiers is ensured.

Aims: To determine the knowledge, attitudes and associated factors of tobacco use among army soldiers in Security Forces Headquarters (SFHQ)-West.

Methods: A cross-sectional study was conducted among 722 army soldiers in nine battalions at SFHQ-West using multistage sampling, conforming to ethical procedures. A self-administered questionnaire was developed using existing and validated tools, pretested and used for data collection. Chi-square test was used in the analysis of associations.

Results: Non-response and incomplete data sheets accounted for 3.2%. Majority of soldiers had poor level of knowledge (58.5%) regarding tobacco use and unfavourable attitudes (73.4%) promoting tobacco use. Unfavourable attitudes were significantly more common in ever smokers ($\chi2$=25.3, df=1, p<0.001, OR 2.4). A statistically significant association was observed between smoking status and total military service ($\chi2$=21.2, df=5, p=0.001). Battle injuries among the army soldiers with a service in operational areas for one year or more was significantly more common among ever smokers ($\chi2$=7.7 df=2, p=0.02). Statistically significant associations were observed between smokeless tobacco use and currently married ($\chi2$=6.5, df=1, p=0.01) as well as living out ($\chi2$=5.2, df=1, p=0.02). A statistically significant association was observed between tobacco use and mental distress (smoking tobacco p=<0.001 and smokeless tobacco p=0.001). There was no statistically significant association between tobacco use status and knowledge on tobacco.

Conclusions & Recommendations: There were higher proportions of both ever and never tobacco users with poor level of knowledge and unfavourable attitudes on tobacco. Important statistically significant associations were revealed. These findings are paramount when translated to practice to develop effective anti-tobacco interventions.

Mental health services need to expand further to address the psychological issues encompassing tobacco use.

Key words: *Tobacco use, Knowledge, Attitudes, Associated factors, Army soldiers*

PP 058

Level of behavioral change regarding lifestyle related risk factors for non-communicable diseases in the Medical Officer of Health area Kuruwita

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Background: Screening and Health promotion are major strategies of prevention of NCDs. Level of behavioral change assessment in each behavioral risk factors are mandatory to assess the successfulness of implemented programmes as it reflects both gaps in service delivery and population health literacy.

Aims: The purpose of the study is to determine the level of behavioral change regarding lifestyle related risk factors for non-communicable diseases in the Medical Officer of Health area Kuruwita.

Methods: A descriptive cross sectional study was conducted in 35 to 65 aged cohort living in Kuruwita MOH area. Two stage cluster sampling was implemented to recruit 360 participants. Primary sampling unit was Grama Niladhari divisions, 30 out of 39 were selected by random sampling. Secondary sampling unit included 35 – 65 years aged individuals. Interviewer administered questionnaire comprised ten key health messages that were taken from Healthy Lifestyle Center Management Guideline. Numerical measure was given to level of behavioral change in each behavior according modified Likert scale, from 0 (Client even doesn't hear about the selected health message) to 80 (Maintaining the behavior on a regular basis) marks, based on Everold Hosein's HICDARM (Hear, Informed, Convinced, Determine, Act, Re-determine, Maintaining) model.

Results: The mean level of behavior change varies from highest (abstinence from alcohol as healthy behavior) (m=43.84, SD=25.58) and the lowest (regular exercise for 30 minutes) (m=19.11, SD=19.57) as healthy behavior. Almost 6% never heard smoking as unhealthy behavior while 21.3% never heard consuming more than 5mg of salt per day is unhealthy behavior. Half (50.3%) of the population is in HIC stage regarding relaxation of mind for 10 minutes as healthy behavior. Most of the people in population have started to practice healthy behaviors such as quitting of tobacco chewing (51.7%), drinking of two liters of water (42.7%).

Conclusions & Recommendations: The population has fair knowledge on NCD related behavioral risk factors but practicing those are not satisfactory. Gaps of behavioral change regarding NCD related lifestyle risk factors should be filled and reasons for not adhering to healthy behaviors should be further evaluated.

Key words: *Everold Hosein's HICDARM modal, Level of behavioral change, Non-communicable disease.*

PP 059

Effect of delay in care on quality adjusted life years of female breast cancer survivors in Sri Lanka

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Background: Evidence from developed countries proves an association of early management of breast cancer and better quality of life of survivors. However, evidence from less-developed countries are incoherent and the association has not been assessed in Sri Lanka.

Aims: To describe the effect of delay in care on the quality adjusted life years among breast cancer survivors attending state Cancer Treatment Centers in Sri Lanka.

Methods: This was a hospital-based case-control study among 800 consecutively sampled female breast cancer survivors attending four out of the nine state Provincial Cancer Treatment Centers. Overall delay in breast cancer care was defined to suit the local context by a panel of experts. Having spent more than ten weeks since detecting the suspicious breast lesion by self and initiating the primary treatment for breast cancer or having spent more than eight weeks since detecting the suspicious breast lesion by a health care provider and initiating the primary treatment for breast cancer was considered as overall delay. An interviewer-administered questionnaire was used to capture the time intervals spent between essential care points along different care paths available in the local health system and the timings were verified using medical records. Locally validated EQ-5D-3L instrument was used to estimate utility values required for quality adjusted life years calculations. Independent sample t-test was used to determine the effect of delay on the quality adjusted life years of survivors.

Results: Mean age (SD) of the study sample at the diagnosis of breast cancer was 55.5 years (+10.7). Overall delay in breast cancer care was as high as 57% (95%CI=53.6%-60.4%). Among the EQ-5D-3L domains, anxiety/depression (69.1%) and pain/discomfort (58.8%) were the mostly affected among the study sample. There was a significantly greater loss of quality adjusted life years among breast cancer survivors who experienced overall delay (-0.34) compared to those who did not experience overall delay (-0.12) (p<0.001).

Conclusions & Recommendations: Having experienced overall delay in breast cancer care significantly reduces the quality of life of survivors. Early management of breast cancer should be key priority in improving quality of life of the breast cancer survivors in the country.

Key words: *Breast cancer, QALY, Quality of Life, Delay, Sri Lanka*

PP 060

Knowledge on unintentional injuries and pre-hospital care among caregivers of children under 5 years in an urban community in Sri Lanka

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Background: Childhood unintentional injuries are considered as a major public health problem with significant morbidity and mortality of children all over the world.

Aims: To describe the knowledge on unintentional injuries and pre-hospital care among caregivers of children under 5 years and its association with their sociodemographic factors

Methods: This was a community-based cross-sectional study. Study setting was a Medical Officer of Health (MOH) area Kolonnawa, an urban setting in the Colombo district of Sri Lanka. A sample of 480 caregivers was recruited by using simple random sampling technique. A pre-tested interviewer administered questionnaire assessed the knowledge on unintentional injuries and pre-hospital care among caregivers (n = 480) of children less than 5 years. Statistical package for Social Sciences (SPSS) 18.2 software was used for analysing the data. Chi-square test was used to assess their associations.

Results: The response rate was 97.3%. More than half (n= 239, 51.2%) of the caregivers reached cut-off marks of "good knowledge" about childhood unintentional injuries.

More than half (n = 291, 62%) of caregivers obtained a total mark on or above the cut-off value of "good Knowledge" about pre-hospital care. Caregivers with age less than 30 years had significant better knowledge on childhood unintentional injuries when compared to caregivers with age more than 30 years. Caregivers educated up to Advanced Level or above had significantly better knowledge on childhood unintentional injuries when compared to those who were educated up to O/L or below (p < 0.005).

Conclusions & Recommendations: Based on the findings of the current study it is encouraging to note that most caregivers had adequate knowledge on childhood injuries and pre-hospital care. Community-based education programs and legislation of preventing hazards for unintentional childhood injuries need to be implemented.

Key words: *Childhood unintentional injuries, Caregiver, Pre-hospital care*

PP 062

Factors associated with metabolic syndrome among patients with severe mental illnesses in a tertiary care hospital in Colombo District, Sri Lanka

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Background: Patients with severe mental illness are at increased risk of developing metabolic syndrome and several factors have been identified as increasing risk of metabolic changes among them. Research done in this regard in Sri Lanka is few and far between. Hence, there is a greater need to identify the risk factors of metabolic syndrome among patients with severe mental illnesses in Sri Lankan setting.

Aims: To identify the factors associated with metabolic syndrome among patients with severe mental illnesses.

Methods: A cross sectional study was done in two psychiatric clinics in Colombo South Teaching Hospital. The study population included all patients with schizophrenia, bipolar affective disorder and depression. The sample of 400 patients were selected by convenient sampling method. Metabolic syndrome was diagnosed according to the American College of Cardiology/ American heart association/ national heart, lung and blood institute guidelines. The criteria included three or more of the following five risk factors: waist circumference $\geq$ 102 cm (40 in.) for men or $\geq$88 cm (35 in.) for women, fasting blood glucose $\geq$ 5.6 mmol/l (100 mg/dl) or use of anti-diabetic medications, triglyceride levels $\geq$ 1.7 mmol/l (150 mg/dl) or use of lipid medications, HDL cholesterol $\geq$ 1.03 mmol/l (40 mg/dl) in males or $\geq$1.3 mmol/l (50 mg/dl) in females or use of lipid medications, and a systolic BP $\geq$ 130 mmHg or diastolic BP $\geq$ 85 mmHg or use of antihypertensive medications. An interviewer administered questionnaire was used to collect socio demographic and other information. The parameters measured were body mass index, waist circumference, visceral and body fat percentage and liver transaminase level. The factors were identified by the logistic regression analysis.

Results: The total number of participants was 442 (95.5%) including 278 females (65.9%) and 144 males (34.1%). The mean age of the study population is 51.36 ± 11.5 years. Most of the males and females are diagnosed as Schizophrenia and related disorders (29.9% and 34.5% respectively) and around one fourth of the males and females have been diagnosed as having Bipolar Affective Disorder (BPAD) (28.5% and 24.5% respectively). The prevalence of the metabolic syndrome among psychiatric patients is 35.8% (95% CI – 34.1-44.0).

Smoking (OR=4.13 95% CI-1.50-11.37), higher visceral fat percentage (OR=1.11 95% CI- 1.04-1.19), higher body fat percentage (OR=1.07 95% CI- 1.01-1.13) and increased HB1Ac (OR= 1.20 95% CI-1.01-1.45) are the risk factors of metabolic syndrome among patients.

Conclusions & Recommendations: Several factors are associated with the metabolic syndrome among Sri Lankan psychiatric patients. Acting upon to prevent and curtail these factors and implement policies to carry out regular screening in psychiatric patients is mandatory.

Key words: *Metabolic syndrome, Severe mental illnesses, Factors*

PP 063

Validation of Longer-Term Unmet Needs after Stroke (LUNS) tool to assess the Unmet Needs among Stroke Survivors

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Background: Stroke causes different types of disabilities which required multidisciplinary care to rehabilitate. Measuring unmet needs is valid indicator in accessing the coverage and effectiveness of stroke care services. Unmet needs are defined as expressed needs of stroke survivors that related to their physical, social and mental wellbeing. Longer-Term Unmet Needs after Stroke (LUNS) is a tool to assess such unmet needs among stroke survivors.

Aims: To validate the LUNS tool to assess the unmet needs among Sinhala speaking stroke survivors in Sri Lanka.

Methods: LUNS tool was culturally adapted using modified Delphi technique as interviewer administered tool. Translation of the tool from English to Sinhala was done using forward and backward translation methods. Following pretesting judgmental validity of the tool was assessed by a panel of experts. The construct validity of the tool was done using the exploratory factor analysis (EFA) among 119 stroke survivors who were at six months post stroke period, using Principal Component Analysis (PCA) method, rotated using varimax orthogonal and oblimin rotation methods. Convergent and divergent validity were assessed by evaluating correlation of the number of total unmet needs with GHQ 12 and Barthel Index respectively. Reliability was assessed by Cronbach's alpha while acceptability was assessed using completion time and response rate.

Results: Approximately 75% of the study units participated in the validation study were above 60 years of age (n=88, 74%) and 61.3% were males. Approximately half of the study population have had education only up to grade 5 or below level (n= 68, 57.1%). In cultural adaptation process, five items were completely removed, six items were modified and four items were added to the LUNS tool. The original LUNS questionnaire had 22 items while the adapted LUNS has 21 items. the Kaiser-Meyer-Olkin test value was 0.782 which confirmed adequacy of sample size for factor analysis. Bartlett's test statistics was significant (1795.548; p<0.001). Assessment of the communalities by PCA led to drop 2 items. Both rotational methods confirmed the 6-factorstructure with 19 items. Convergent and divergent validity assessed using Spearmen r- test for the total unmet needs and GHQ 12 and Barthel Index were significantly correlated (r= 0.403, p<0.001, and r=-0.687, p<0.001). The Cronbach's alpha value for the reliability assessment were high and ranged between 0.976 - 0.579 for 5 factors. Acceptability was confirmed with 17.52 minutes of completion time and with 98.93% overall response.

Conclusions & Recommendations: The LUNS tool was found to be a valid, reliable and acceptable tool to assess unmet needs among the Sinhala speaking stroke survivors. It is recommended to use this tool when providing post stroke care services at health institutions.

Key words: *Stroke, Unmet Needs, LUNS, Follow Up*

PP 064

Pattern of disability due to knee osteoarthritis among elderly in rural North India

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Background: Osteoarthritis (OA) is common among elderly and one of the leading causes of disability. Prevalence of knee OA is increasing due to increasing proportion of elderly. It is important to assess the pattern of disability with knee OA among elderly patients. Haryana is one of the Northern states of India.

Aims: To assess the disability due to knee osteoarthritis among rural elderly patients in Ballabgarh, Haryana

Methods: This study was a community based cross-sectional study. Simple random sampling was done and 500 elderly were selected. Trained investigator undertook structured face to face interviews that included screening question for knee pain, clinical examination of knee using American College of Rheumatology (ACR) criteria. Those found positive for knee OA were assessed for disability using modified Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) Centre for Rheumatic diseases (CRD), Pune version. Range, Median and IQR was calculated for WOMAC scores. Wilcoxon Rank Sum test was applied for continuous dependent variable.

Results: Among 454 elderly recruited (response rate 95%), 292 (64.3% C.I. 59.7-68.7) had knee OA of any knee). The total score of WOMAC questionnaire among individuals with knee OA (N=292) ranged from 0 to 96, with a median score of 51 and IQR 41-59. Regarding individual domain scores the results were as follows: the highest was observed in total score for physical function domain which ranged from 0 to 68 with a median score of 39 and IQR of 31-44];the total score for pain domain ranged from 0 to 20 with a median of 10 and IQR of 7-12; the total score for stiffness domain ranged from 0-8 with a median score of 3 and IQR of 2-4. The mean (S.D.) of total score was 49.54 (15.53), for physical function score it was 36.82 (11.34). For pain score it was 9.49 (3.71), and for stiffness score 3.23 (1.92). Disability score was significantly higher among females with knee OA compared to males (p= 0.0018). Also disability score was significantly higher among illiterate compared to those who had any formal education (p=0.0002). Disability score was significantly lower among elderly who were currently doing physical activity (p= 0.0011).

Conclusions: Disability among elderly with knee OA was higher, highest being in physical function. Female and illiterate had higher disability. Elderly currently doing physical activity had lower disability.

Key words: *Knee osteoarthritis, Disability, Elderly*

PP 065

Ethnic encumbrance of diabetes in urban Colombo

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Background: Diabetes mellitus and its pre-clinical forms increase the cardio-metabolic risk of populations. Colombo district has an estimated prevalence of diabetes of 17.4%. Advancing age, Moor and Tamil ethnicities, level of education are associated with diabetes in Sri Lanka.

Aims: The study objectives were to estimate the prevalence of diabetes mellitus, describe the social and environmental correlates of diabetes and to characterise the geospatial distribution of diabetes with GIS mapping among adults in the Colombo Municipal Council (CMC) consisting of Sinhalese (53%), Tamils (15.4%) and Moors (30.5%).

Methods: A community based cross sectional analytical study was carried out in 2015 in the CMC among 1350 participants aged 35-64 selected by multi-stage cluster sampling from 45 clusters with 30 adults in each. Demographic, socio-economic and lifestyle data were collected by trained data collectors using the Cardio-metabolic Risk South Asia (CARRS) questionnaire validated for Sri Lanka. Fasting blood glucose (FBG) level was measured adhering to standard procedure and was classified as per ICD 10 classification. Statistical analysis was done by SPSS version 21. The natural distribution of risk weighted FBG values yielded 3 categories. Ethnic risk was weighted as Moor (high) Tamil (lower) Sinhalese (lowest). GIS maps were plotted using ArcGIS software for risk weighted diabetes and race.

Results: The overall prevalence of diabetes was 28.1% (95% CI: 24.4-30.7) and newly diagnosed diabetes was 17 %(CI: 14.4-19.4). Moors had a higher risk for diabetes compared to the Sinhalese (AOR= 2.25, 95% CI: 1.36- 3.71). Advancing age of 45-54 (AOR= 1.75, 95%CI: 1.02-3.03) and 55-64 (AOR=1.82, 95% CI: 1.03-3.20) was associated with diabetes. The GIS mapping identified 3 high risk clusters for race. Among the 11 high risk clusters identified for diabetes, only one was represented from among the high risk clusters for ethnicity.

Conclusions & Recommendations: Prevalence of diabetes is high in the CMC area. Socio-demographic tendencies in diabetes and its risk pockets should be considered. While GIS can be useful in mapping diabetes, the real relationship between diabetes and ethnicity may remain cryptic.

Key words: *Diabetes mellitus, Cardio-metabolic risk*

PP 066

Prevalence of Erectile Dysfunction (ED) among type 2 diabetes patients and its correlates.

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Background: Erectile dysfunction, the persistent inability to achieve or maintain an erection sufficient for satisfactory sexual performance, is a common complication of diabetes. The reported prevalence of ED in men ranges from 27% to 75%. Many studies found that metabolic parameters including duration of diabetes is associated with type 2 diabetes; and eventually is a predisposing factor for erectile dysfunction.

Aims: To find out the association between the metabolic parameters , including duration of diabetes with erectile dysfunction among type 2 diabetic patients.

Methods: This was an observational, cross-sectional hospital-based study conducted at the out-patient unit of Department of Endocrinology, PSG Hospitals, Coimbatore. All married men aged 20-60 years with a diagnosis of type 2 diabetes attending the out-patient unit of Department of Endocrinology, PSG Hospitals, Coimbatore during the months of May and June 2019 were studied. Patients with a history of any coronary event (myocardial infarction, coronary artery bypass surgery, or coronary angioplasty) in the previous 4 weeks and patients with liver diseases, renal diseases, and dialysis were excluded. The severity of erectile function was assessed using the validated International Index of Erectile Function (IIEF-5) questionnaire. Duration of diabetes was elicited in an ordinal scale (1-5, 6-10, 11-30 years). All subjects were evaluated for smoking status, alcohol consumption, obesity, physical activity, retinopathy and hypertension. Multivariate logistic regression analysis was used to assess the effect of the duration of diabetes on ED adjusting the effects of the above-mentioned covariates.

Results: A total of 204 patients were studied, amongst which 65 (31.86%) were found to have ED. A significant increase in the prevalence of ED with duration of diabetes was observed. In patients with diabetes, for 1-5 years, the prevalence was 24.1%; for 6-10 years, the prevalence was 27.7% and for 11-30 years, the prevalence was 53.1%. The multivariate adjusted odds ratio (OR) of erectile dysfunction for 11-30 years duration of diabetes compared to 1-5 years duration of diabetes was 2.505 (95%CI:1.038-6.045), $p<0.05$. For hypertensive men with type 2 DM, OR of ED for 11-30 years duration of diabetes compared to 1-5 years of duration was 4.167 (95% CI:1.403-12.372, $p<0.05$) and it was more than twice the OR of those without having hypertension (OR=1.879, 95% CI:0.610-5.785, p=0.272). A similar finding was observed for lower physical activity as well. For type 2 diabetes patients without physical activity, the OR of ED for 11-30 years duration of diabetes was 4.607 (95% CI:1.924-11.028, $p<0.05$) and it was almost three times the OR of those with physical activity (OR = 1.650, 95% CI:0.410-6.646, p=0.481).

Conclusions & Recommendations: For type 2 diabetic men, increasing duration of diabetes was positively associated with increasing risk of ED. It also appears that hypertension and lower level of physical activity increase the prevalence of ED amongst men with diabetes. The prevalence in these scenarios is much higher than in patients who are only diabetic. Our results are consistent with the hypothesis that health care providers who address sexual dysfunction issues with their diabetic patients early may be able to reduce the severity or delay the onset of ED in their patients.

PP 056

Physical Inactivity and unhealthy dietary patterns among government school teachers in the Southern province, Sri Lanka: A cross sectional study

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Background: Unhealthy diet and physical inactivity are common modifiable risk factors for cardiovascular diseases, diabetes and malignancies. As these diseases are on the increase identifying these unhealthy practices among teachers will be helpful in planning targeted interventions to prevent same and to improve their productivity at work, overall health and quality of life.

Aims: To describe the level of physical activity and unhealthy dietary patterns among government schoolteachers in the Southern province

Methods: Study design was a descriptive cross-sectional one. Computed sample size was 651. Ninety-three schools (clusters) were selected randomly from among 1108 schools in the Southern province, using cluster sampling technique. Self-Administered Questionnaire 1 (SAQ I) [based on WHO STEP survey questionnaire] was used to assess physical activity and dietary practices. Adequacy of physical activity levels and fruit and vegetable consumption were assessed according to WHO definitions.

Results: Mean age of the sample was 46.1 (SD=7.2) and 77% (n=501) of them were females (n=501). 38.7% were overweight and 9.55 were obese. Prevalence of overall physical inactivity was 38.7% (95% CI: 34.9 – 44.2%). Physical inactivity was highest during work (79%) in comparison to during leisure time (52%) and transportation (33%). Prevalence of low fruit and vegetable consumption ($\leq$5 servings per day) was 66.5% (95% CI: 63.9 -69.1%). Fifty percent (49.6%) consumed food and drinks containing sugar $\geq$5 days per week. Twenty four percent (23.5%) consumed high salt containing processed food and 38.2% added salt to rice when cooking.

Conclusions & Recommendations: The prevalence of physical inactivity, low fruit and vegetable consumption, sugar and salt intake which are unhealthy were high among the participants. Targeted interventions and supportive policy decisions will help to reduce unhealthy behaviours among middle aged teachers.

Key words: *Prevalence, Behavioural, Risk factors, Diet, Physical activity, Teacher*s

PP 067

Management of the dead in disasters: knowledge, attitudes and self-reported practices among a group of army soldiers in Galle District, Sri Lanka

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Background: Improper management of the dead in disasters can hinder the identification, leads to loss of important forensic evidence and affects the dignity of the dead. Army soldiers play a vital role in dead body management in disasters.

Aims: To describe the knowledge, attitudes and self-reported practices on management of the dead in disasters among army soldiers in Galle district, Sri Lanka.

Methods: This descriptive cross sectional study was conducted in 2017 using a pre-tested self-administered questionnaire in two selected army camps in Galle district. Based on the percentage of correct responses, army soldiers were classified into three groups denoting their overall knowledge using pre-determined cut-off values. Those who had a score of >70% and <50% were categorized as having a "good" and "poor" level of overall knowledge respectively while those with a score of 50-70% were considered as having a "moderate" level of knowledge.

Results: Out of the total of 188 army soldiers included in this study, a majority (61.2%, n=115) had a moderate level and 32.4% (n=61) had a good level of overall knowledge. In particular, knowledge on wearing face masks by dead body recovery teams (8%), spraying disinfectants to dead bodies (30.9%) and use of ambulances to transport the deceased (34%) was poor. Though 21.8% believed that funeral rites are not important, only 12.8% believed that there's no need to respect dead bodies as they are dead. A majority (69.1%) had reported that they had engaged in dead body management in disasters as army soldiers and 59% had reported that they had used gloves and boots in dead body recovery process.

Conclusions & Recommendations: Even though a majority had either moderate or good level of overall knowledge, deficiencies of knowledge in certain aspects of management of the dead in disasters were evident. A majority had more favourable attitudes in many aspects of management of the dead in disasters. There is a space for improvement in certain practices of dead body management.

Key words: *Dead body management, Disasters, Army soldiers, Sri Lanka*

PP 068

Prevalence & associated factors of perceived stress related to commuting for work among non-executive employees in large scale Information Communication & Technology companies in Colombo Metropolitan Area

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Background: Commuting for work is a daily encounter which has reached to an extent of causing detrimental effects on human health, causing physiological and psychological manifestations. It has been identified as one of the major global health concerns of the new millennium by World Health Organization in 2000. Therefore it's important to identify the prevalence of perceived stress related to work commuting and related factors to initiate preventive actions to secure both mental & physical wellbeing of the public. Information Communication and Technology (ICT) workers were selected due to their large workforce of more than 150, 000 employed in Colombo and due to the diversity of the population.

Aims: To assess the prevalence and associated factors of perceived stress related to commuting for work among non–executive ICT employees in large-scale ICT companies in Colombo Metropolitan area

Methods: A cross sectional descriptive study with an analytical component was conducted in employees of ICT companies of Colombo Metropolitan area from February 2018 to January 2019. Non-executive employees who were having an entry level qualification of IT (Information Technology) related Diploma, Higher Diploma or Degree was selected for the study. Administrative level employees and employees who were on leave were excluded. The calculated sample size was 422. Random sampling was done in two stages, first during selection of the ICT companies & second during selection of the employees from each company. Data were collected using a pre-tested self-administered questionnaire. Associations were assessed using Chi square test and was considered as significant at $p<0.05$.

Results: The response-rate was 98.1% with 414 participants. Prevalence of the perceived stress relating to work commuting was found to be 73.9% (69.5-77.9). The factors found to have a significant association between perceived stress related to commuting for work were as follows: marital status (p=0.003); having children (p=0.007); having dependents other than the children (p=0.004); education level (p=0.011); number of working hours (p=0.001); duration in IT field as an employee (p=0.048); self-rated job satisfaction (p<0.001); and overall self-rated health status (p=0.003); commuting time (p=0.004); heavy traffic congestion (p<0.001); self-rated condition of public transportation (p=0.018); and high travelling expenses (p<0.001).

Conclusions and Recommendations: Majority of participants had perceived stress related to work commuting. Marital status, number of children in the family, having or not having dependents other than children in the family and education level, number of working hours, duration in the IT field as an employee affects the stress perception. Self-rated overall health status and self-rated job satisfaction, commuting time, traffic congestion, self-rated condition of public transportation and cost of traveling were identified associated factors. This study encompasses many Sustainable Development Goals (SDG 7,11,13,14,15). Therefore, it is important to encourage future research to enlighten our knowledge and also to develop strategies to reduce perceived commuting stress.

Key words: *Perceived stress, Commuting stress, Commuting, ICT employees, Colombo Metropolitan area*

PP 069

Prevalence and Factors associated with Occupational Stress among Government Secondary School Teachers in the District of Colombo Sri Lanka

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Background: Occupational stress among teachers is an important work related health problem globally. Teachers with occupational stress have increased risk of non-communicable diseases, poor teaching performance and harsh student disciplining. Teacher stress affects the education, society and economy of a country requiring prompt attention due to its wider public health impact. With the backdrop of student punishment trend in schools, we carried out this study to understand the extent of the problem to impose necessary preventive action in Sri Lanka.

Aims: To determine prevalence and factors associated with occupational stress among government secondary school teachers in Colombo district of Sri Lanka.

Methods: A descriptive cross-sectional study included 1426 (95.06% response rate). Secondary teachers were selected by multistage cluster sampling method from public schools of Colombo District. Self-administered Teacher Stress Inventory (TSI)–Sinhala, socio-demographic questionnaire and questionnaire with relevant individual and work characteristics were data collection tools. The 49-item TSI-Sinhala with two main domains: sources and manifestations of stress was culturally adapted and validated in a different component of the study to measure occupational stress in teachers. Teachers were classified into high, moderate and eustress levels of occupational stress using predetermined cut-offs. Individual and work-life related factors associated with high occupational stress were determined through multivariate analysis.

Results: Prevalence of high 15.9% (95% CI: 14.0%-17.8%) and moderate 67.5% (95% CI: 65.1%-69.9%) occupational stress among secondary teachers in public schools in Colombo was observed, with an overall prevalence of 83.4% (95% CI: 81.4%-85.3%). Individual related factors associated with high occupational stress were age <50 years (p<0.05), monthly income <Rs. 40,000.00 (p=0.04), presence of chronic illness (p<0.05), not engaged in regular exercises (p<0.05), poor sleep (p<0.05). Work experience <5 years (p<0.01), class size >32 students (p<0.05), taking schoolwork home (p<0.05), dissatisfaction of surrounding noise (p<0.01), perceived poor relationship with students (p<0.01), perceived poor support from the superior staff (p<0.05) and other teachers (p<0.05) were significant work-life related factors in multiple logistic regression.

Conclusions & Recommendations: Prevalence of overall occupational stress was high among secondary teachers. It is recommended that a preventive programme for occupational stress be designed and implemented based on identified associated factors to prevent future consequences and improve teacher wellbeing.

Key words: *TSI-Sinhala, Teacher occupational stress*

PP 070

Knowledge and practices on modifiable lifestyle factors regarding hyperlipidemia among employees in a private organization at the Colombo Port in Sri Lanka.

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Background: South Asia Gateway Terminal (SAGT) is a private container handling company situated in Colombo port in Sri Lanka. About 650 employees work in the company. Hyperlipidemia and subsequent cardio vascular diseases are leading health issues among the working population. Identifying risk groups, dietary, life style and behavioural modification other than pharmacological interventions are more valuable for cost effective interventions.

Aims: To determine prevalence and to describe the knowledge and practices related to hyperlipidemia among the employees of SAGT.

Methods: Descriptive cross sectional study was conducted. Systematic sampling was the method used to identify the study sample. All the registered employees in the organization were included in the sampling frame. Every third employee in the register was included in the sample. A total of 193 participants completed the pre-tested, self-administered questionnaire. In addition, relevant data were extracted from employees' health record maintained at the company health centre. One mark was given to each correct response and marks were aggregated according to different sections of knowledge or practices. Chi square test was used to identify associations.

Results: Among the selected sample, a total of 59.6% (n= 115) were having high lipid levels. A total of 45.1% (n=87) persons were overweight and 8.3% (n=16) were obese. Prevalence rates of smoking and alcohol were 28% (n=54) and 67.9% (n=131) respectively. Among those who were identified having hyperlipidaemia, only 59.1% (n=65) employees were seeking treatment from western medicine. Highest satisfactory knowledge 90.2% (n=174) was observed in relation to the knowledge on effects on life style on lipid levels. The lowest level of knowledge 21.2% (n= 41) was observed in relation to the effect of high lipid levels leading to stroke. Overall aggregated level of satisfactory knowledge was observed among 67.9% (n= 131) employees. There was no relationship between overall knowledge and BMI/ physical activity/alcohol consumption or dietary pattern except with job category (p > 0.027) and smoking (p > 0.026).

Conclusions & Recommendations: Even though company employees have good knowledge regarding hyperlipidaemia, they do not have good life style practices. Therefore the practices towards minimizing hyperlipidaemia with the active participation of the employees, the management and the health staff is required.

Key words: *Hyperlipidaemia, Modifiable life style factors.*

PP 071

Assessment of healthcare provision during disaster response stage in District General Hospital Matara, Sri Lanka

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Background: Disaster response is one of the most important phases in disaster management. It is important to reduce the health consequences of the emergencies and to minimize the social and economic burden.

Aims: To assess health care delivery during disaster response stage in District General Hospital Matara.

Methods: A descriptive cross-sectional study was carried out with qualitative and quantitative components. Six different study instruments were used for data collection. The study setting was District General Hospital Matara and the study participants were the medical officers and the patients admitted during the disasters. Knowledge and practices of medical officers on disaster response were categorized taking the mean as the cut off mark and willingness to work during disasters was documented descriptively.

Results: The response rate of the medical officers was 91.72% (n= 266). The overall level of knowledge on disaster response was poor 57.9% (n= 154) while knowledge on Sendai Framework for Disaster Risks Reduction was markedly poor 95.1% (n= 253). Overall practice was poor 58.3% (n=155) among the respondents (mean score = 29.84; SD= 26.27). Only 11.3% (n=30) of the respondents had participated in drills/simulations and 21.1% (n= 56) were trained on disaster management. A higher level of knowledge was significantly associated with good practice on disaster response of medical officers (p< 0.05). The willingness to work during disasters was influenced by the availability of personal protective equipment, training received on disaster management and the sense of responsibility. Highly effective factors and less effective factors for effective healthcare management for disasters were identified. Updating the hospital disaster preparedness and response plan and conducting drills were not done periodically. Although the hospital lacks few facilities needed for disaster response, patients were satisfied with the healthcare delivered during the disaster response stage according to the qualitative component.

Conclusions & Recommendations: It is recommended to periodically update disaster preparedness and response plans, conduct drills in government hospitals and continuous in-service training programs to update the medical officers to enhance the delivery of healthcare during the disasters.

Key words: *Disaster response, Preparedness, Healthcare, medical officers*

PP 072

Profile of animal bites in relation to rabies and post exposure prophylaxis in a suburban population in Anuradhapura district, Sri Lanka

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Background: Sri Lanka has a well-established National Rabies Control Programme and a large proportion of health budget is allocated annually for treatment and prophylaxis of rabies.

Aims: To determine the incidence of animal bites with a post exposure risk of rabies in a suburban population in Anuradhapura district.

Methods: Out Door Patient (OPD) visiting for Anti Rabies Vaccination (ARV) were randomly selected to a convenient sample size of 920, during the period of January to June in 2016. Data were collected using OPD registry, vaccination records and vaccine registry in PCU at Base Hospital Thambuththegama and Medical Officers in OPD collected furthermore data from animal bite victims using interviewer administered questionnaires.

Results: Over the period, 5% (n =730.16) of the monthly OPD visits were due to animal bites. Minor exposure animal bites were the commonest (96.4%) and 88% (n=809) of animal bites were caused by domestic animals without proper recorded rabies vaccination. Majority of the animal bites have occurred in 1- 5 years of age group and 43.3% (n=382) of the patients were below the age of 15 years. Although in general majority of animal bites were in females (51.7%), below the 15 years of age males were significantly predominant (n=236, 61.8%, p=0.016). Cat bites or scratches (n=459, 49.9%) were common presentations while 48% (n=442) presented with dog bites and 2% (n=19) with other animal bites including monkey, wild rat and giant squirrel. Foot (n=558, 60%) and hand (n= 218, 23%) were the commonest sites of animal bites in all age categories. The minimum delay for Post-Exposure Prophylaxis was 1 day (n=539, 58%) and maximum delay was 13 days (n=1) and 6.7% (n=62) presented within 24 hours. Every victim of animal bite has washed the bite wound with soap and running water and 85% of them have applied disinfectants.

Conclusions & Recommendations: Cat (n=459, 49.9%,) and Dog 48%, (n=442) were the commonest types of animal bite and children in 1- 5 years of age group 43.3% (n=382) were found to be the most vulnerable victims. Responsible animal ownership will reduce the rabies related risk and economic-health burden for human anti rabies vaccination.

Key words: *Animal bites, Rabies, Post Exposure prophylaxis, Anti Rabies Vaccination*

PP 073

Knowledge and work related practices among patients with occupational injuries attending the Accident Service Unit of Colombo South Teaching Hospital

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Background: Globally, occupational injuries cause 2.3 million deaths per year and it is estimated that over 313 million non-fatal occupational injuries occur annually. International Labour Organization recognizes that knowledge on occupational safety and health is the key to prevention of occupational injuries and emphasizes the importance for workers to be able to identify occupational hazards at their work places, as this risk assessment forms an integral part of occupational health and safety.

Aims: To describe the types of occupations and employment characteristics in patients with occupational injuries admitted to the Accident Service Unit of the Colombo South Teaching Hospital and to assess the knowledge and describe work related practices on occupational health and safety among them

Methods: A descriptive cross-sectional study was conducted among 221 patients with occupational injuries attending the Accident Service Unit of the Colombo South Teaching Hospital. Convenient consecutive sampling technique was applied. A pre-tested interviewer-administered questionnaire was used as the study instrument and two medical officers administered the questionnaire.

Results: Among the study population 31.2% (n=69) were employed in construction work followed by manual workers 19.9% (n=44). The majority, 90.5% (n=200) worked in the private sector and only 5% (n=11) were employed in the government sector. Also, 68.3% (n=151) were employed in informal work places. Of the study population 85.5% (n=189) had a good overall level of knowledge and only 5% of the study population (n=11) had poor level of knowledge. The study revealed that 62% (n=137) were provided with personal protective equipment but only 24.4% (n=54) have regularly used them. Of the study population 20.8% (n=46) revealed that they worked under influence of alcohol and 37.1% (n=82) admitted that they smoked cigarettes while at work.

Conclusions & Recommendations: The study revealed that most patients with occupational injuries work in unsafe work environments and have high risk work practices. Therefore, it is important to strengthen implementation of Occupational Safety and Health legislation and increase the coverage of training of MOOH and PHII in occupational health, which would facilitate the officers to increase awareness and advocate safe work settings and practices among employers and employees.

Key words: *Occupational injuries, Work practices, Personal Protective Equipment*

PP 074

Prevalence, knowledge and associated factors of menopausal symptoms among women aged 40-60 years in a semi urban area in Matara district, Sri Lanka

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Background: Menopause, which is characterized by a reduction of production of ovarian hormones usually happens between the ages of 45-55, however it can happen as early as 30 years. Majority of the women experience various physiological and psychological changes during this period.

Aims: To determine the prevalence, knowledge of menopausal symptoms and their associated factors among women aged 40-60 years in a semi urban area of Matara district

Methods: A descriptive cross sectional community based study was carried out among 212 women aged 40 -60 years in three Grama Niladhari divisions of Matara district namely, Malimbada East, Malimbada South and Galpamuna which were selected randomly. Each correct knowledge statement was given one mark and incorrect statement zero marks. Depending on the mean knowledge score, overall knowledge was categorized as good and poor knowledge. Data were collected using an interviewer administered questionnaire. A validated menopausal rating scale used to measure menopausal symptoms. Data was analyzed using SPSS version 23. A probability of p<0.05 was considered significant.

Results: Of the sample 50.5% (n=107) were postmenopausal women, 31% (n=66) were pre -menopausal and 18.4% (n= 39) were in menopausal transition. Mean (SD) age at menopause was 47.84 years (+4.048). Most commonly reported somatic symptoms were hot flushes 74.1% (n=157) joint and muscular discomfort 65.1% (n=138) physical and mental exhaustion 64.2% (n=136) and sleep problems 59.5% (n=126) respectively. However, only 13.2% (n=28) had medications for above symptoms. Postmenopausal women had a higher proportion of menopausal symptoms when compared to premenopausal / menopausal transition states and these were statistically significant (p<0.05). Mean knowledge score was 6.84+1.8. Little more than half 55.1% (n=117) of women had good knowledge regarding menopause and its symptoms. Married women and more educated women had better knowledge regarding menopause (p<0.05). Common co-morbidities were back pain, migraine, hypertension, diabetes, varicose veins and high cholesterol.

Conclusions & Recommendations: Only little more than half of the respondents had good knowledge regarding menopause. Marital status and education level had significant association between knowledge regarding menopause. Women should be educated regarding menopause and its symptoms and how to minimize the problems when the reach middle age, which could be through Well Women Clinics or any other clinics where women visit frequently.

Key words: *Menopause, Menopausal symptoms, Prevalence, Knowledge*

PP 075

Internet addiction and its correlates among medical and other health science students

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Background: The recent rise and popularity of the internet has become an important part of everyone's day to day lives. At the same time, many studies have reported that increasing internet use among adolescents and young adults is a health concern and is proved to be problematic owing to its dysfunctional use. In other words, the dramatic increase in the internet usage among college students in the recent years has led to its pathological use (internet addiction).

Aims: The aim of the present study is to estimate the prevalence of internet addiction, to describe the associations with internet usage patterns along with the extent of problems caused by such potential misuse.

Methods: Young's Internet Addiction Test (IAT) was administered on medical and allied health students. In the IAT, there are 20 questions with a score range of 5 and those who got a score of more than 50 were considered to be addicted to the internet. Items on the IAT measures internet use, compulsive behavior, academic difficulties due to internet usage, problems with interpersonal relationships, emotional problems and lack of competence at work. The Internet use patterns studied were the type of gadget used, usage of the internet for music, news, online games, online chatting, online purchases, and communication. Data was analyzed using SPSS 19. Chi square test was used to find the statistical association. p<0.05 was considered as statistically significant.

Results: Among the 490- students studied, internet addiction was observed in 140 (28.57%) students. Medical students were found to be more addicted to the internet 70.0 % (n=98) compared to physiotherapy students 57.7 % (n=202) (p<0.05). The year of study of students had no association with internet addiction. Students who consumed more junk food 62.1 % (n=87) were more likely addicted to the internet than those who didn't 33.4% (n=117) (p<0.001). It is also observed that exercise, place of origin, place of residence and parents' education had no association with internet addiction. There is no significant association among internet addicts and the type of gadgets they used. People who used the internet for music (p<0.01), the internet as a means for news (p<0.01), playing games online (p<0.01) and those

who used the internet for spending time on social media (p<0.01) were more likely to be addicted to the internet.

Conclusions & Recommendations: We had observed a high prevalence of internet addiction in medical and physiotherapy students. Monitoring internet usage of students with proper counseling and guidance is recommended.

Key words: *Internet addiction, Medical students, Junk food consumption, Social media, Exercise.*

PP 076

Information required for development of a m-health nutrition and lifestyle intervention for reducing cardiovascular disease risk in adults: A qualitative study

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Background: With the evolution of mobile phone technology and its wider usage, mobile health (m-Health) is viewed as a promising tool to foster behavior change. However, different views and opinions exist in the community regarding its development and use.

Aims: To explore community perspective and information required to develop a mobile phone based nutrition counselling and lifestyle modification intervention.

Methods: A qualitative approach was used. A total of 15 focus group discussions (FGDs) were conducted among adults aged 35 to 64 years from different sub-populations from the Colombo district. Further, 20 in-depth interviews (IDIs) were conducted with information technology experts (IT), paramedical staffs and medical professionals. A narrative analysis was performed through an iterative process grounded in the data.

Results: Most of participants were using mobile phones, computers, mobile applications, and web-based facilities for health care purposes, but hardly anyone followed any mobile application on nutrition and healthy lifestyle. The participants expressed the need of a m-health intervention on nutrition and healthy lifestyle promotion. Participants preferred to receive health messages in their local language and at a convenient time of the day.

IDI with medical and paramedical professionals revealed potential content (optimum portion size, reduce intake of salt and sugar, increase intake of vegetables and fruits, reduce alcohol consumption and quit smoking) to be included in the m-health messages. IDI with IT experts disclosed specific technical details for mobile application, application programming interface (API) gateway for text and voice messages, web-server specifications, role of mobile service provider (deliver the m-health intervention according to an automated schedule), and costs for the development of mobile application and its use.

Conclusions & Recommendations: The participants believed m-health is a very powerful tool both in curative and preventive health services, and ideal solution for health promotion that suits with their busy lifestyle. IDIs were helpful in deciding the content and technical requirements for m-health application development

Key words: *m-Health, Nutrition intervention, Lifestyle modification, Cardiovascular disease*

PP 077

Quit attempts and cessation among smokers in India: a secondary analysis and comparison of Global Adult Tobacco Surveys 1 and 2

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Background: Smoking cessation is the most effective strategy to prevent lung cancer among current smokers. Evidence from developed countries suggests that cessation services influences attempts to quit with a higher proportion quitting successfully (cessation). However, this evidence on quitting behaviour among smokers in India is limited.

Aims: This study aimed to assess the socio-demographic characteristics and cessation services used by smokers in India aged 15 years and above i) who attempted to quit ii) who successfully quit iii) and compare the correlates between Global Adult Tobacco Surveys (GATS) 1 and 2.

Methods: This was a secondary data analysis of Indian GATS round 1 (2009-10) and 2 (2016-17). Ever smokers aged 15 years and above from GATS 1 (13581 individuals) and 2 (11843 individuals) were the study participants. Binary and multivariate logistic regression was performed to determine the associations between socio-demographic characteristics and cessation services with attempts to quit and successful quitting. Analysis was done using STATA version 11.2 software

Results: In both GATS 1 and 2, correlates such as age group, level of educational attainment, residence, occupation, asset quintiles and advised to quit by healthcare provider were significantly associated (p<0.01) with quit attempts and successful quitting. Logistic regression showed that smokers who were advised to quit by a healthcare provider had higher odds of attempt to quit and it was the only factor significantly associated with attempts to quit in both GATS 1 and 2. Among those attempted to quit, older age groups, higher educational attainment were associated with successful quitting in both GATS 1 and 2. Of smokers, who reported to have used cessation aids like nicotine replacement therapy, counselling, prescription medication etc., none had neither attempted to quit nor successfully quit in both GATS 1 and 2. Attempts to quit and successful quitting have increased among smokers in India between the years 2009 (GATS 1) and 2010 (GATS 2) from 40.5% (n=13518) to 46.6% (n=11843) in attempts to quit and from 35.7% (n=5442) to 37.2% (n=5518) in successful quitting.

Conclusions & Recommendations: The study provides first national evidence on correlates of quitting behaviour among Indian smokers. Study highlights the absolute lack of quit attempts and successful quitting among those who used various cessation services. Study also highlights the need to focus on younger age groups, less educated and economically poorer groups to increase quit attempts and consequent cessation.

Key words: *Tobacco, Cessation, Health system, India*

PP 078

Health technology assessment and health policy-making: A narrative review of existing literature

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Background: Health-technology-assessment(HTA) is a policy-tool for informed decision-making which supports the entry and use of pharmaceuticals, medical devices, and other technologies within health systems. Three main forces have driven the development of HTA; rising healthcare demands and expectations, scarcity of resources, and increasing entry of new technologies to the healthcare market. In Sri Lankan, the rising cost of healthcare has not been matched by a corresponding rise in the healthcare budget. With a commitment to Universal Health converge(UHC) decisions on investments considering cost-effectiveness is crucial.

Aims: To discuss the documented global evidence on the importance and the relationship between HTA and evidence-based decision-making in health policy making and the potential way forward in Sri Lanka

Methods: A comprehensive literature review on HTA and Policy-making was undertaken using the databases Medline, Embase, Biomed-central, Science Direct, Web of Science, for relevant articles. Also, useful websites, reports were looked up. The searches were conducted in December 2018. The search strategy for scientific literature consisted of free text and MeSH terms related to keywords, namely; HTA, Evidence-informed decision making, HTA-report, Health policy.

Results: HTA studies the medical, social, ethical, and economic implications of development, and use of health-technology and analyses the health-technology in a globally accepted systematic, unbiased, scientifically rigorous and structured manner. The basis is to guide the healthcare system in evidence-based decision making that is patient-centered and achieves the highest value for money. Once the topic nomination and prioritization of health technology is done, it undergoes three phases; Assessment, Appraisal, and Decision-making. The assessment considers all relevant information, i.e cost and clinical effectiveness, financial resources, priorities for health services, health needs of the community, and ethical and equity considerations. Based on the evidence, recommendations are made to the authorities whether the new technology is suitable for funding. Considering the evidence generated together with societal and ethical aspects, healthcare providers make their decisions to improve population health and equity. Successful implementation of HTA needs the following; 1. a competent health information technology infrastructure, 2. establish a core HTA team and building national capacity 3. transparency of HTA agency and process and legislations 4. extensive networks 5. linking HTA to decision making the process

Conclusion: HTA is an essential tool for evidence-based decision making and allocating health budgets towards achieving UHC. HTA is a systematic approach to evaluate the effectiveness, costs, and health impact, of a health technology while considering ethical and equity issues. Institutionalizing HTA needs a conducive environment and commitment.

Keywords: *HTA, Evidence-informed decision making, Health policy, Institutionalizing HTA*

PP 079

Unmet needs among stroke survivors of Sri Lanka

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Background: Stroke is a clinical condition that leads to different aspects of disabilities among the victims. The assessment of unmet needs helps to identify the problems with their perspectives. Unmet needs are defined as 'expressed needs that are not satisfied by current service provision'. Unmet needs among stroke patients may be related to their physical, social and mental well-being.

Aims: To assess the unmet needs among stroke survivors

Methods: A descriptive cross-sectional study was conducted to assess unmet needs among 301 stroke survivors six months of stroke incident. recruited from 11 specialist hospitals of western province. The validated and culturally adapted Sinhala version of Longer-Term Unmet Needs after stroke (LUNS) tool was administered by trained medical graduates at their homes by to assess unmet needs.

Results: Only 34 (11.3%, 95%CI 8.0-15.4) stroke survivors did not expressed any unmet need while 13 (4.3 %, 95%CI 2.3- 7.3) had at least one unmet need. The most reported unmet need was the information regarding the stroke and stroke prevention (n=202, 67.1%). The least reported unmet need was the requirement of more information regarding continuing sexual relationships (n=12, 4.0%). Approximately 50% of the respondents reported unmet needs related to information on diet, further pain relief and vision improvements. In addition, services to control anger was an unmet need among 41.2 % (95%CI 35.6-47.0). The mean number of unmet needs was 6.61 (SD=4.83).

Conclusions & Recommendations: Unmet needs among the stroke survivors were found to be widespread at the end of six months of post stroke period with only about one tenth of the stroke survivors reporting none. Therefore, it is recommended to monitor the unmet needs among stroke survivors to ensure stroke survivors receive quality care to improve their rehabilitation process.

Key words: *Unmet Needs, Stroke, LUNS*

PP 080

Past illicit drug use and associations of drug related incarceration among male prison inmates in Prison, Galle

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Background: Illicit drugs are psychoactive substances that the production, sale or use is prohibited. Prison population is considered as one of the most vulnerable groups among those who are at-risk of such illicit drug use. A significant amount of prison admissions are drug related in many countries, including Sri Lanka.

Aims: To describe the past illicit drug use and associations of drug related incarceration among male prison inmates in Prison, Galle

Methods: A cross-sectional study was conducted among a random sample of 441 incarcerated males in Prison, Galle. An interviewer-assisted, self-administered questionnaire was used to collect data on illicit drug use and reasons for incarceration among the participants. Data were analyzed using SPSS software. Ethical approval was obtained from the Ethical Review Committee, Post Graduate Institute of Medicine, University of Colombo.

Results: Majority of the participants were Sinhalese (94.1%) and Buddhist (93.2%) with a mean age ($\pm$SD) of 33.2 ($\pm$9.5) years. Approximately 75% were manual workers and educated below G.C.E O/L, 71% lived in nuclear families and 60% were married. Of the participants, 48.5% were readmissions and 81.9% were in prison for less than six months. Past illicit drug use was reported among 57.6% of prison inmates and 32.6% were addicted to illicit drugs. Nearly half (48.9%) of the participants were admitted with drug related offences; majority (75.5%) being due to keeping illicit drugs for consumption. Drug related prison admissions were significantly associated with younger age ($p<0.001$), being unmarried ($p =0.010$), previous prison admissions, use of tobacco products, past use of and addiction to illicit drugs, poly drug use and engaging high risk behaviours (all $p<0.001$).

Conclusions & Recommendations: Past illicit drug use and drug related prison admissions are a common problem among young, unmarried prison inmates creating a considerable burden for the prison system. Urgent attention of policy makers is needed to address the prevention of the illicit drug use and rehabilitation of the affected persons to minimize this burden.

Key words: *Incarceration, Illicit drug use, Drug addiction, Male prison inmates*

Poster Presentations
Day 3: 21ˢᵗ September 2019, 10.00 am – 10.30 am
Poster session 12: Clinical Care and Public Health

PP 061

Correlations of metabolic control of diabetes mellitus among adults in Wales, UK.

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Background: The prevalence of diabetes especially type 2 is increasing all over the world. Diabetes prescribing has been changed from older drugs to newer expensive drugs causing economic burden to health systems. Evidence on prescribing variations and cost for treatment of diabetes and their effects on outcome is important for countries with high diabetes prevalence.

Aims: To describe the variation in prescription patterns and the cost of diabetes treatment across primary care practices in Cardiff, UK and to compare the expenditure versus outcome.

Methods: Study was done on patients treated at 64 primary care institutions (GP surgeries with 515581 patients) in Cardiff and Vale University Health Board area. Percentage of adult patients with type 2 diabetes having HbA1c < 58 mmol/mol was taken as the outcome variable. Data on diabetes patients were obtained from Quality and Outcome Framework Wales, 2018 data base. Expenditure and usage of commonly used diabetes drugs were assessed using CASPA data base where the drug expenditure of the primary care institutions published annually. Cost per patient for diabetes medication, prevalence of diabetes, prescription patterns and outcome were assessed and compared between nine GP surgeries.

Results: Out of all patients, 4.94% (n=25492) were diagnosed with diabetes. Rate of having HbA1c <58mmol/mol was 63.17% (range 43%-76%). Overall usage of Biguanides was 43.68% but Sulphonylurea was only 15.29%. The frequency of prescription of the other drugs included DPP4 inhibitors (13.2%), SGLT2 inhibitors (8.9%), GLP1 agonists (3.19%) and Insulin (14.08%). The average annual per patient cost for diabetes drugs was £302.93, with a wide range of £207.00-£475.28. GP surgeries which reported lower perpatient cost, have used more Biguanides and Sulphonylureas than the newer drugs. However, no relationship was seen between drugs used, cost per patient and the metabolic outcome, measured by HbA1c.

Conclusions & Recommendations: There is a wide variation in prescribing patterns for patients with diabetes and annual per patient cost for diabetes among community GP surgeries which does not relate to improved metabolic outcomes. Substantial savings in prescribing costs for diabetes drugs may be possible by retention of use of less expensive drugs in more patients without compromising metabolic outcomes.

Key words: *Diabetes, Prescribing cost, Primary car*e

PP 081

Epilepsy profile and the association of selected factors in epilepsy control and adherence to medication in children attending the epilepsy clinic at Lady Ridgeway Hospital for Children

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Background: Approximately 50 million people currently live with epilepsy worldwide. Childhood epilepsy is reported to affect 6 -10 children per 1000 children in developing countries. Promotion of medication adherence is important particularly in a disease like epilepsy which needs long term medication.

Aims: To describe the epilepsy profile and to determine the association of selected factors in epilepsy control and adherence to medication in children attending the epilepsy clinic at Lady Ridgeway Hospital for Children.

Methods: A cross sectional study was conducted among 349 children with epilepsy accompanied by the main caregiver. Systematic sampling method was applied. An interviewer administered questionnaire was used to collect data. Data analysis was done using SPSS version 21. Chi square test was applied to assess the associations.

Results: The commonest type of epilepsy among the children attending the clinic was generalized epilepsy (30.8%, n=106). It was found that 52.3% (n=180) children of the study sample were on mono therapy. Good adherence to antiepileptic medication was seen in 83.7% (n=288) of the children. The employment status of the caregiver (p<0.05), the type of epilepsy (p<0.05), type of therapy (p=0.01) and the fit free duration (p=0.03) had statistically significant association with adherence medication in children with epilepsy.

Conclusions & Recommendations: Regular assessment of adherence to anti-epileptic medication and updating care givers' knowledge on the disease is important to improve the overall care in children with epilepsy.

Key words: *Epilepsy profile, Epilepsy control, Care givers, Children, Epilepsy clinic.*

PP 082

Knowledge on epilepsy, drug compliance and associated factors among epilepsy patients attending neurology and medical clinics at Teaching Hospital, Karapitiya (THK), Sri Lanka.

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Background: Epilepsy is a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures. Seizure control is the key aspect of management of epilepsy.

Aims: To assess knowledge on epilepsy, drug compliance and associated factors among patients with epilepsy attending neurology and medical clinics at Teaching Hospital, Karapitiya, Sri Lanka.

Methods: A descriptive cross sectional study was conducted at neurology and medical clinics of THK from June to July in 2018 in which 60 randomly selected patients with epilepsy were assessed by using a self- developed, pre tested, interviewer administered questionnaire to assess knowledge on epilepsy, drug compliance and socio demographic data.

Independent sample t test and one way ANOVA were done to assess mean differences of knowledge score and drug compliance score depending on number of groups. In addition, Pearson product-moment correlation coefficient was computed to assess the association between the knowledge score and drug compliance score.

Results: Majority of the participants were females 63.3% (n=38) and majority 65% (n=39) belonged to age category 18-38 years. Most of the participants (51.7%, n=31) had studied up to G.C.E O/L and most of the patients (55 %, n=33) belonged to income category =< 10,000 rupees per month. Mean knowledge score of the participants was 45.56 (SD= 23.64) out of a total score of 100. Patients' knowledge was associated with their educational level (p=0.002), family history of epilepsy (p=0.012) and family support (p=0.001). Mean drug compliance score of the participants was 47.0 (SD= 24.37) out of a total score of 100.Patients' drug compliance was associated with overall monthly income of the family members (p=0.046), advices received from health care personnel in clinic (p=0.036) and family support (p=0.007). There was a positive correlation between patients' knowledge and drug compliance (r= 0.334, n=60, p= 0.009).

Conclusions & Recommendations: Findings reveal that majority of respondents had average knowledge regarding epilepsy and majority did not have optimal drug compliance. Therefore, the demand for more advanced educational programs has become a need.

Key words: *Epilepsy, Drug compliance*

PP 083

An assessment of Geriatric care at medical units of District General Hospital, Matara

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Background: Population aging is a universal phenomenon and it appears particularly relevant for Sri Lanka too. 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.

Aims: The aims of this study were to determine the health care needs of elders and to assess the knowledge and attitudes regarding geriatric care among the medical officers and nursing officers.

Methods: Descriptive cross-sectional study was conducted at General Hospital Matara during March 2018. Study consisted of two components. First component was the assessment of health care needs of elderly patients. Interviewer administered questionnaire was used to collect data from 422 elderly patients selected from systematic sampling method. Second component was the assessment of knowledge and attitudes of medical officers and nursing officers towards geriatric care. Sample size was 108 and a self-administered questionnaire was used to collect data.

Results: Among the elders 98.1% (n=414) responded to the study. 56.0% (n=232) of elders belonged to young elderly (60 − 74 years) 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 75.4% (n=314) of elders had impaired vision. Only 25.1% (n=104) of elders had impaired hearing status. Among the elders 62.3% (n=258) had dementia and 32.9% (n=136) had depression. Among Medical Officers and Nursing Officers 54.1% (n=53) had no training on elderly care. Among them, 74.5% (n=73) had satisfactory knowledge and 72.4% (n=71) had positive attitudes towards elderly care.

Conclusions & Recommendations: ADL status, impaired vision, hearing status, dementia and depression level of elders were associated with their age. Knowledge and attitudes of medical officers and nursing officers were associated with their training on elderly care. Therefore training opportunities on elderly care should be provided to them to deliver a better service.

Key words: *Geriatric care, Health needs of elders, knowledge, Attitudes*

PP 084

Association of socio-behavioral factors and medications on erectile dysfunction among patients with type 2 diabetes mellitus

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Background: Several studies have shown an increased prevalence of erectile dysfunction among patients with type 2 diabetes mellitus. Reported prevalence of erectile dysfunction in men ranges between 35% to 75%. Studies have also reported that several socio-behavioural factors and medications significantly influence the risk of erectile dysfunction among type 2 diabetic patients.

Aims: To find the association of certain common socio-behavioral factors and medications on erectile dysfunction among type 2 diabetes patients.

Methods: The socio-behavioral factors studied were smoking, duration of smoking, number of cigarettes smoked per day and alcohol consumption. The medications studied were tranquilizers, antidepressants, cancer drugs, anti-hypertensives, cardiovascular drugs, diuretics, H2 receptor antagonist and hormonal agents. The validated International index of Erectile Dysfunction questionnaire was used to estimate the prevalence and degree of erectile dysfunction. Logistic regression analysis was done to find the association between these factors and erectile dysfunction.

Results: Among the 108 patients studied, 34 of the patients (31.5%) had erectile dysfunction. Among 39 people taking cardiovascular drugs, 14 (35.9%) were having erectile dysfunction whereas among 69 people not taking cardiovascular drugs, only 29% we're having erectile dysfunction. Among the drugs taken were mostly beta blockers for prophylaxis and certain calcium channel blockers. However, the difference was not statistically significant (p=0.458). Among the 26 people taking anti hypertensives, 8 (30.8%) were having erectile dysfunction whereas among 82 people not taking antihypertensive only 26 (31.7%) were having erectile dysfunction. Among the anti-hypertensives taken mostly were Angiotensin Converting Enzyme Inhibitors and Angiotensin Receptor Blockers. However, the difference was not statistically significant (p=0.928). Among 11 people taking hormonal agents 5 (45.5 %) were having erectile dysfunction whereas among 97 people not taking hormonal agents only 29 (29.8 %) were having erectile dysfunction. However, the difference is not statistically significant (p = 0.292) although there is a positive association. The number of patients taking antidepressants and H2 receptor antagonists were considerably low and hence analysis was not conducted.

Conclusions: The study revealed a positive association between the factors and erectile dysfunction. However a statistically significant relationship was not obtained. A larger study may yield this relationship.

Key words: *Erectile dysfunction, Diabetes mellitus*

PP 085

Cervical cancer screening: Feasibility of new HPV/DNA screening implementation among ever married 35 age cohort women in Kalutara district

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Background: Cervical cancer is the 2nd leading cause of female cancer in Sri Lanka. Hence, in 1998, Sri Lanka took the initiative to include screening for cervical cancer with conventional papaniculaou (pap) smear in the Well Woman Clinics. However, even after 20 years of cervical cancer screening (with pap smears), there is no marked reduction in incidence, morbidity and mortality of cervical cancer in Sri Lanka. One major drawback of the present programme is the suboptimal sensitivity of the pap smear to detect Cervical Intraepithelial Neoplasia.

Aims: To determine the feasibility of new HPV/DNA screening implementation as a primary cervical cancer screening method.

Methods: A cross-sectional study was conducted in the MOH areas of Kalutara district (sample size =822). A Public Health Midwife area was taken as a cluster (number of clusters=413). HPV/DNA cervical specimen collection was carried out by MOOH/PHNSS at Well Woman Clinics in the community. Cost estimation of the HPV/DNA screening procedure was carried out according to the Scenario-Building Technique. Assessment of client perception for the new HPV/DNA test was gathered by using an interviewer administered questionnaire. All HPV/DNA positives were subjected to a conventional cytology. HPV/DNA positive and cytology ≥ASCUS were subjected to a colposcopy. Positive follow-up and feasibility indicators were assessed.

Results: The estimated unit cost of the HPV/DNA test procedure was Rs.2881.95. Client perception was highly positive for the HPV/DNA screening test procedure (99.6%) and 99.6 % clients mentioned that the HPV/DNA screening test should be incorporated into the national cervical cancer screening programme in Sri Lanka. The percentage of cytological abnormality among women who tested positive for HPV/DNA was 29.4%. Biopsy tissue abnormality was found among 80% of women who were positive for HPV/DNA and who also had cytological abnormality. The coverage of the HPV/DNA screening test was 89.5%. The mean time duration for specimen collection and transportation to the laboratory was 7 days, whereas report delivery to the MOH office was 13 days. The percentage of invalid results was 0.12%.

Conclusions & Recommendations: HPV/DNA screening test is feasible to be incorporated into the National Cervical Cancer Screening programme as a primary cervical cancer screening method. It is necessary to further attempt alternative methods of cobas 4800 HPV/DNA test, which would be suitable for resource limited setting.

Key words: *Cervical Cancer Screening, HPV/DNA screening test, pap smear*

PP 086

Misconceptions about metformin use among patients attending diabetes clinic in Teaching Hospital Karapitiya (THK)

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Background: Metformin is the first line medication used in the treatment of diabetes. Misconceptions prevalent in Sri Lankan society have created anxiety about use of metformin.

Aims: To identify common misconceptions about metformin among patients attending the diabetes clinic at THK and to assess knowledge and factors associated with taking prescribed dose metformin.

Methods: A hospital base descriptive cross sectional study was conducted with 400 patients who attended the diabetes clinic at THK. An interviewer administered questionnaire was used to collect data. Data was analyzed with Chi square, ANOVA and independent T tests using SPSS 20.

Results : In the study, 78.5% (n=314) were females. Most 80.7% (n=323) were of Sinhalese ethnicity. Approximately 30.50% (n=122) had educational achievements up to O/L. The most common misconceptions were 72.5% (290) believed that long term use of metformin caused renal failure and 64.3% (n=257) believed long term use of metformin cause liver failure. A further 18% (n=72) believed taking thebu kola (*Costus speciosus*), Karavila (*Momordic charantia*) or home remedies were more effective for diabetes control than taking metformin. Patients 55.7% (n=223) admitted to deliberately taking metformin at less than the doses prescribed to them in the clinic. There was significant association between taking prescribed dose of metformin and education level (p<0.05), with those with higher educational attainment being more likely to take the prescribed doses correctly. But no significant association was noted with age, gender, family history and duration of illness. The mean knowledge score on metformin was 6.3 ± 4.1. A substantial proportion of patients (41.8%, n=167) scored in 0-4 score range. Higher education levels of patients were associated with higher knowledge scores (p<0.05).

Conclusions & Recommendations: Though routinely medical staff provides basic knowledge on diseases and medications, many misconceptions regarding use of metformin prevailed among patients with diabetes attending the diabetes clinic. Overall knowledge about metformin was not satisfactory. This was especially so in the patients with lower educational levels. The lower knowledge and prevalent misconceptions resulted in many patients not adhering to the doses of metformin prescribed. A concerted effort specifically addressing misconceptions related to metformin use both at individual patient level and in mass media is recommended to address this important health problem.

Key words: *Misconceptions, Metformin, Diabetes*

PP 087

Caregiver skills on activities of daily living provided by family caregivers of dependent stroke survivors: preliminary results of a study from Colombo, Sri Lanka

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Background: Stroke is a life changing event that affects both the stroke survivors and their family members. The role of the family caregiver may differ, depending on the functional limitations of the stroke survivor and the need for assistance with Activities of Daily Living (ADL). Thus caregiving skills are essential to enhance rehabilitation and post-stroke recovery of stroke patients.

Aims: To assess the baseline skills of providing care related to ADL by family caregivers of dependent stroke survivors in Colombo, Sri Lanka.

Methods: A descriptive cross-sectional study was conducted on family stroke caregivers. The dependency of stroke survivors was confirmed by Barthel Index validated for Sri Lanka. Care giving skills were observed on family caregivers of highly dependent stroke patients (Barthel Index below 60). Subjects were selected from two teaching hospitals and a base hospital in Colombo district. Family caregivers were assessed using an observation guide on caring tasks related to ADL, which was developed based on the literature and expert opinion. The level of performance of caregivers was scored out of a total score of 100.

Results: The family caregivers of the above stroke survivors comprised 33 males and 40 females (n = 73). The mean age of the patients was 61.9 years and the mean age of the caregivers was 47.2 years. Majority of caregivers were educated up to G.C.E. (Ordinary Level). Caregiving skills were observed in 40 family caregivers. The mean (SD) score of the caregivers was 46.3 (17.3). Poor performance was observed in 25 (62.5%) caregivers (mean=35.7, SD=8.8).

Conclusions & Recommendations: Majority of the family caregivers had poor skills when providing care to stroke survivors. The findings indicate the need for proper skills training to the family caregivers to provide appropriate post stroke homecare. A proper health education programme needs to be established to train care givers so that better homecare is provided for the stroke survivors.

Key words: *Barthel Index validated Sri Lankan version*

Out Patient morbidity pattern in primary care hospitals in Galle District

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Background: Primary care had been identified as the key area for development by Ministry of Health over next few years. Assessing morbidity pattern of Out-Patient Departments (OPD) attendees is important in order to improve quality of services provided at primary care level.

Aims: To describe out-patient morbidity pattern in primary care hospitals in Galle District.

Methods: A descriptive cross sectional study was conducted by collecting information pertaining to 1,500 OPD attendees in 15 Divisional Hospitals in Galle District. A data sheet was used to collect data and OPD medical officers gathered information. This study was conducted over a 3-day period simultaneously. This had been done to generate evidence for primary care development plan in RDHS Galle.

Results: A total of 1,500 OPD attendees in 15 Divisional Hospitals were taken for analysis. Majority were females (53.7%). When considering the age categories 2 peaks were noted. Less than 10 years of age group (17.1%) and 41 – 50 age group (15.8%). Respiratory tract infection was the commonest main presenting complaint (32.2%) for seeking care from OPD followed by fever (11.0%). Among those who were more than 20 years of age majority were females and it was statistically significant (X^2=5.56, p = 0.02, df=1). Among those who presented with RTIs majority were less than 20 years ($X2$=48.5, p =<0.01, df=1)

Conclusions: In the OPDs majority of the attendees were females and respiratory tract infection was the commonest main presenting complaint. The services provided should focus on the morbidity patterns observed.

Key words: *Out patient Departments, Morbidity patterns, primary care hospitals, Galle.*