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Dengue Fever/Dengue Hemorrhagic Fever: Morbidity, Mortality Seasonal Variations and Spatial Distribution in Sri Lanka, 1996 - 2014

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Background: Dengue Fever and Dengue Hemorrhagic Fever (DF/DHF) are endemic in Sri Lanka. It has been included as a notifiable disease in 1996 and shows a dramatic increase in the incidence of dengue and its severe manifestations making this infectious disease a major public health problem. Climate change is associated with changes in seasonal weather patterns with subsequent impacts on the suitability and temporal and spatial distribution of these infections. The objective of this study was to describe trends of DF/DHF morbidity, mortality, seasonal variations and spatial distribution in Sri Lanka from 1996 to 2014.

Methods: Data were obtained from the published database maintained at the Epidemiology Unit of the Ministry of Health in Sri Lanka. We analyzed incidence patterns of DF/DHF with annual climatic changes for the period of 1996 to 2014. The annual rainfall data for Sri Lanka were obtained from the Department of Meteorology and the populations in administrative districts were obtained from the Department of Census and Statistics, Sri Lanka.

Findings: Total number of DF/DHF in the study period was 290,788. More than 5,000 newly identified DF/DHF were reported annually since 2000. The disease show a seasonal trend, where two peaks of DF/DHF occur following monsoons in April-July and November-February. Almost all districts in Sri Lanka report DF/DHF each year and pose a threat to the health of the people. Five districts namely Colombo, Gampaha, Kalutara, Kurunegala and Kandy have reported more than 60% of the burden and the age group 25 - 49 years shows the highest incidence. Total number of deaths caused by DF/DHF from 1996 to 2014 was 1,641. However, the rate of case fatality rates decreases from 4.2% to 0.2%.

Interpretation: DF/DHF has become a national threat in Sri Lanka. Health authorities and health care institutions should play a critical role to implement an effective DF/DHF control programs emphasizing on removal of mosquito breeding places and environmental management.

Source of Funding: None.

Abstract #: *1.014_INF*

HIV Awareness in the Former Soviet Union: An Assessment of HIV Knowledge among Varied University Disciplines in Armenia

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Background: Globally, 36.7 million people are HIV-positive, the majority of whom are living in low- and middle- income countries, with 2.1 million new cases in 2015 alone (WHO). In Armenia, 3,600 people live with HIV and it's estimated that over 60% of that number are unaware of their status (UNAIDS). Since the emergence of the AIDS epidemic in 1981, progress combatting the spread of HIV has been hindered by lack of education, biased attitudes and unsafe practices. In Armenia, these factors are compounded by lack of public health resources and awareness. The purpose of our study was to gain an understanding of the level of knowledge of HIV in Armenia, and also to quantify specific areas of misunderstanding.

Methods: An IRB approved population-based cross-sectional descriptive study was conducted in Yerevan, Armenia to identify knowledge, attitudes and practices regarding HIV. Quantitative data was collected from a validated questionnaire administered throughout the Yerevan State University campus to individuals between ages 18-68, and 440 completed surveys were collected. Associations among variables were explored using regression-based approaches for continuous variables and non-parametric techniques for categorical variables.

Findings: Completed survey data was collected from students representing numerous disciplines. The mean age of surveyees was 22-years-old (SD = 5.3), with women and men represented by 60.4% and 39.6% respectively. Furthermore, 88.1% were unmarried, 91% resided in an urban area, and 96.2% were able to afford at least clothes and food. When asked, "Can a person get HIV by sharing food or utensils with a person who has HIV/AIDS?" 83.9% of women correctly answered "no" while only 73% of men chose "no" ($p = 0.0047$). Surprisingly, a significant difference was found between level of education and knowledge of routes of transmission of HIV ($p = 0.014$). Among students in higher education, the only demographic scoring above 80% knowledgeable of routes of transmission of HIV was that of medical and dental students, of whom 63.5% were found greater than 80% knowledgeable.

Interpretation: The results of this data provide insight into specific misconceptions regarding HIV in Armenia, especially as pertains to areas of higher education and gender, and provides a basis for better-targeted HIV risk reduction programming and education.

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Abstract #: *1.015_INF*

Association between Risky Sexual Behavior and Cervical Cancer Screening among Women in Kenya: A Population-based Study

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Background: Cervical cancer is one of the most common types of cancer worldwide. Throughout the sub-Saharan African region, the World Health Organization recommends screening and vaccination against Human Papilloma Virus (HPV) to prevent cervical cancer. Sexual behavior has long been recognized as a major risk factor for cervical cancer. However, population-based studies examining the relationship between sexual behavior and cervical cancer

screening are currently lacking. This study examined the association between risky sexual behavior and cervical cancer in screening among a representative sample of women in Kenya.

Methods: This descriptive cross-sectional study utilized secondary data from the 2014 Kenya Demographic and Health Survey to examine 6,126 sexually active women who reported ever hearing of cervical cancer. The main outcomes of interest were self-reported cervical cancer examination, including Papanicolaou (PAP) test or visual inspection with acetic acid (VIA) or with Lugol's iodine (VILI).

Findings: Overall, 20.3% of the study sample reported having cervical cancer examination. Approximately 13.1% of the participants were involved in risky sexual behavior. Significantly lower proportion of women engaged in risky sexual behavior reported having cervical cancer examination (14.4% vs. 21.2%; p=0.001). In the multivariable model, we found a significant interaction between risky sexual behavior and marital status on cervical cancer examination. Among women who were married/living together, risky sexual behavior was negatively associated with cervical cancer examination, independent of confounders such as age, education, household wealth index, parity, type of residence, total life time number of sex partners, age of sexual debut and access to health facilities (Odds Ratio, 95% Confidence Interval) (0.43, 0.24 − 0.76; p=0.004). Similarly, married/living together women who were involved in risky sexual behavior were less likely to have visual inspection with VIA or VILI (0.41; 0.19-0.90; p=0.027). However, we were unable to detect any significant association between risky sexual behavior and having PAP test.

Interpretation: With increasing rates of cervical cancer in low-resource settings, it is critical to identify populations at increased risk of infection and provide effective screening and follow-up services.

Source of Funding: None.

Abstract #: *1.017_INF*

The Perception and Management of Acute and Chronic Pain in Rural Ghana

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Background: This article describes the perception of and management for acute and chronic pain experienced by residents of the Barekese sub district of Kumasi, Ghana. We were interested in understanding what types of pain were experienced by Ghanaians, how it affected their daily lives, and what they did to manage it.

Methods: We performed field research in health fairs held in various locations. We also sought to interview participants in their homes in door-to-door interviews. The interviews were performed using a modified form of the "Brief Pain Inventory" (Cleeland 1991) which is used widely to assess pain. The interviews were subsequently coded for interpretation of the data.

Findings: A myriad of types and intensities of pain are pervasive throughout the Barekese sub district regardless of any specific demography. Of the 618 participants interviewed, 63.84% reported experiencing acute or chronic pain in the past 24 hours. The most reported locations of pain were the lower back (27.95%), head (11.79%), and abdomen (10.51%). Additionally, 49.75% reported experiencing pain that moderately or severely interfered with their enjoyment of life. Furthermore, 83.16% of those experiencing pain used some form of intervention for relief of pain.

Interpretation: As there have been very few articles to address an understanding of pain experienced by Ghanaians, more research is needed to further identify the overarching national problems of pain amongst Ghanaians. Published research has also contributed little to assessing realistic access to pain management in the form of medical or pharmaceutical intervention.

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Abstract #: *1.018_INF*

High Ambient Temperatures as A Cause of Neonatal Fever? Investigating the Association Between Environmental Temperature and Newborn Body Temperature

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Background: Fever in newborns is highly concerning for serious infections, prompting clinicians to perform a workup and initiate antibiotic treatment. High environmental temperatures during summertime may be associated with non-infectious temperature elevation in newborns, yet little is known about the prevalence of fever during that season.

Our goal was to determine the prevalence of elevated body temperatures of asymptomatic infants <3 mo during routine exams in high ambient temperatures during summer in India.

Methods: The study took place in Mota Fofalia Pediatric Center, in Gujarat, India and included randomly selected infants <3mo who received routine (non sick) newborn care in the postnatal ward or during routine post-hospitalization health checkups the home of the child. During encounters the following measurements were taken: weight, heart rate, ambient temperature of the room, rectal temperature, and presence of danger signs. Infant's vaccination and mother's infection status were abstracted from the medical record. Reporting is descriptive.

Findings: 81 environmental and body temperature measurement pairs were obtained in 41 children: female: 20 (49%); mean age: 7 days (range: 0-42 days). The average environmental temperature was 35.9°C (Range: 34.4-40.4°C); the mean rectal temperature in infants was 37.6°C (Range: 36.9-39.8). 14/41 (34%) of children were measured febrile >38°C with 19/81 (24%) of rectal temperatures elevated at 38.0°C or above (Range: 38.0-39.8°C). Ambient temperatures in febrile vs. afebrile measurements were not significantly different (36.1°C vs 35.8°C; p>0.2). Febrile vs afebrile children did not differ with regards to age, birth weight, and vital signs (p>0.1). None of the 41 children exhibited signs of systemic infection; 2/41 infants received systemic antibiotic therapy: one febrile for maternal fever, one afebrile for conjunctivitis). All children were well and alive after 1 week.