

Public Health I

Chairpersons: P Adams, W Adu-Krow

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Mercury levels in hair from pregnant women in Suriname

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Objective: To compare the levels of mercury in hair samples from women of reproductive age from three regions of Suriname.

Methods: Hair samples were collected from female volunteers considered to be of reproductive age and who were pregnant at the time of enrolment. Samples were collected from women in Paramaribo, Nickerie and interior villages in the Brokopondo region. One gram of hair samples obtained close to the scalp was rinsed, cleaned and processed for total mercury analysis using cold vapor atomic absorption spectroscopy. Hair: blood conversions (250:1) were carried out to facilitate comparison with levels from other biomonitoring studies in the United States of America. Levels of mercury among villages were analysed using non-parametric methods.

Results: Mercury levels in the hair were determined in 266 women from Paramaribo, 56 from Nickerie and 25 from the interior area. Median levels were 0.6 µg/g (range 0.0–4.1 µg/g), 0.7 µg/g (0.1–4.4 µg/g with one at 21.2 µg/g), and 2.1 µg/g (0.7–11.8 µg/g) in Paramaribo, Nickerie and the interior area, respectively.

The individual in Nickerie with the highest exposure was deemed a statistical outlier, and follow-up indicated her exposure was likely not dietary. Mercury levels in the interior were significantly higher than those in Nickerie or Paramaribo ($p < 0.001$, KW 44.1).

Conclusion: Levels of mercury in women from coastal Suriname were similar to those in the USA. Levels of mercury in the interior were much higher than in coastal

communities which may reflect consumption of fish from watersheds with high mercury concentrations.

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Generic drug use: A 2017 survey of primary care physicians' knowledge, attitudes and practices in Barbados

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Objective: To determine the knowledge, attitudes and practices (KAP) of registered primary care physicians in the private and public health sectors of Barbados regarding generic drugs and their use.

Methods: A self-administered questionnaire was used to capture the KAP of randomly selected registered primary care physicians in the public and private health sectors of Barbados. Data were analysed using descriptive statistics, Chi-square test and regression models.

Results: Data on 120 respondents were used for analysis; 70% were private sector physicians. Fifty-seven per cent responded 'no' to manufacturing standards being the same for both generics and branded drugs. The mean knowledge score was 4.9 ± 0.16 out of eight. Most physicians believed generics were as safe as branded drugs and were more affordable (53% and 95%, respectively) and 65% believed that generic drug substitution contributed to the cost-effective management of disease. Two-thirds of physicians were opposed to automatic substitution of generics by pharmacists. Public physicians were three times less likely to agree that generics were as safe as branded drugs ($p = 0.01$) and that patients should be encouraged to use more generics ($p = 0.03$). They were also six times less likely to agree that generics were as effective as branded drugs ($p < 0.001$). All physicians prescribed generics; however, six in 10 were hesitant to and 31% did not recommend generics to family, with public physicians time times less likely ($p = 0.02$) to recommend to family.

Conclusion: All physicians prescribed generics. However, gaps in physician knowledge have been identified. Public physicians had more negative attitudes towards generics.

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A cross-sectional study investigating texting and driving in Grenada, West Indies

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Objective: The aims of this study were to determine the prevalence of texting while driving behaviours, the factors associated with this behaviour, as well as to assess public receptiveness to interventions in Grenada, West Indies. This will inform efforts to curb motor vehicle accidents (MVAs) locally.

Methods: An anonymous 16-item questionnaire assessing cell phone usage while driving was completed by Grenadian drivers recruited from across Grenada. The survey assessed incidence and prevalence of texting while driving, frequency of MVAs involving texting, participant risk perception, demographic data, as well as which interventions were perceived to be effective in reducing texting while driving. Drivers were approached in public car parks and road-sides by the study researchers to obtain their participation.

Results: A total of 191 survey responses were collected. The mean age was 37.05 ± 10.038 years; 50.3% admitted to texting while driving. Statistical significance between group differences were documented with variables of gender (females comprised 59% of the never texted group vs only 40% of the texting while driving group, $p = 0.009$), mean age (never texted group 39.3 ± 11 years vs texted while driving group 34.9 ± 8 years, $p = 0.003$) and knowing anyone involved in a MVA due to texting while driving (texted while driving group 26% vs never texted group 5%, $p = 0.001$).

Conclusion: Younger age, male gender and knowing other drivers who had MVAs texting while driving were associated with increased incidence of persons texting while driving. Interventions targeting the socially reinforcing effects to these groups, safer technologies, as well as legislation may mitigate the consequences of texting while driving in Grenada.

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An assessment of how obesity levels vary with demographic factors in students entering secondary schools in Georgetown, September 2017

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Objective: To assess the prevalence of obesity, by calculating the body mass index (BMI) and comparing to BMI for age, the World Health Organization (WHO) Z-scores, in students entering secondary schools in Georgetown in September 2017.

Methods: A cross-sectional study was conducted for the period of August to September 2017. Random sampling methods were used to identify five secondary schools in Georgetown, with the intention of collecting data from students who would be enrolling in those schools. Demographic data were collected *via* questionnaire. Students' weight and height were measured. Body mass index was calculated for each student and then WHO Z-scores were generated.

Results: Two hundred and forty-two students were assessed (M 40.8%, F 59.2%); 28.5% of the students had above normal BMI with 9.9% of them being obese and 18.6% being overweight. Obesity was found to be more common in boys than in girls (M 15%, F 6%); however, more boys than girls were overweight (M 22%, F 14%). There was a significant association between gender and BMI ($p = 0.045$). The highest rate of obesity was shown in the mixed race (42%) and the frequency of obesity (50%) and overweight (42%) were highest in nuclear families. Participants from families with two or less siblings demonstrated the highest rate of obesity (75%). The prevalence of obesity was increasingly greater in families earning a total gross income of 100 000 GYD or more per month. The highest frequency of above normal BMI occurred in participants residing in Region 4 (67%) [$p = 0.001$]. There was no significant association between the other demographic factors tested.

Conclusion: Overweight and obesity affected a significant proportion of the paediatric population in Guyana.

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Determinants of health behaviour using a modified Health Belief Model: The case of tobacco smoking in secondary school students in Guyana in 2015

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Objective: This study sought to determine whether the modified Health Belief Model (HBM) was applicable in determining smoking status in secondary school students in Guyana.

Methods: Descriptive analysis was performed on the secondary data from the 2015 Global Youth Tobacco Survey (GYTS) dataset. Logistic regression was used to examine the relationship between the smoking status (smoked and smokeless tobacco) and the various independent variables with odds ratio (OR) generated.

Results: The mean age of the 1697 participants was 12.9 years. Males accounted for 41.9% and females 58.1%. The main predictors for smoked tobacco use were barriers to smoking (OR: 0.616; 95% confidence interval: 0.479–0.99) and perceived susceptibility (OR: 0.589; 95% confidence interval: 0.431, 0.804). Regarding smokeless tobacco use, the main predictors were barriers to smoking (OR: 1.878 confidence interval: 1.254, 2.813) and perceived susceptibility (OR: 2.178; 95% confidence interval: 1.637, 4.060). Cues to action and perceived severity were not statistically significant for both smoked and smokeless tobacco. Smoked tobacco use was associated with increased age; gender had no significant effect. Age and gender were not significant in determining smokeless tobacco use.

Conclusion: Most students of all ages smoked at some point in time, which only solidifies the need to strengthen prevention policies and programmes to target all school children including primary school students.

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Parental smoking and peer pressure as predictors of adolescent smoking: The case of Guyana

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Objective: To determine if parental smoking and peer pressure were predictors for smoking in secondary school students in Guyana.

Methods: Secondary data from the Global Youth Tobacco Survey was analysed using Statistical Packages for Social Sciences (SPSS) Version 20. Logistic regression models were fitted to the cross-sectional data to estimate the effects of parental smoking and peer pressure defined as being invited to smoke or being offered a smoke by a friend (independent variables) on smoking status (dependent variable).

Results: Peer pressure (odds ratio [OR] of 3.2; $p < 0.001$; 95% confidence interval (CI) 1.9, 5.4) was a significant predictor of smoking in students. Additionally, having a parent as a smoker was a significant predictor (OR 2.1; $p < 0.002$, 95% CI: 1.3, 3.2).

Conclusion: This study showed that peer pressure and smoking parents were good predictors of the smoking habits of adolescents. There is the need for policy to be put in place to address the smoking epidemic in students – starting from primary schools to secondary schools.

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Association between body composition and physical function in urban Jamaican elderly men and women: Assessing sarcopenia

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Objective: To test the hypothesis that lower indices of lean body mass (LBM) is related to lower function and sarcopenia in Jamaican elderly.

Methods: The study was non-randomized with non-probabilistic sampling of free living participants. Lean body mass and fat mass (FM) were measured using reference methods (DEXA and deuterium dilution with collection of saliva) and bioelectrical impedance (BIA). DEXA appendicular lean mass (ALM) was calculated and all measurements were adjusted for height ($\text{kg}/\text{height}^2$) to give LBMI, FMI and ALMI. Function was assessed by measuring six-metre walking speed, six-minute walk distance (6MINW) and handgrip strength using a dynamometer.

Results: Participants were 56 females and 54 males, aged 60 to 80 years. Bland Altman comparisons showed no significant difference among the three LBM methods, and they showed similar associations with each of the functional assessments controlling for age and gender. Lean body mass index and ALMI were positively related to handgrip ($p = 0001$) but not related to the walk tests. Fat mass index and BMI were negatively associated with the walk tests. The 6MINW was low in 35% of the participants compared to less than 10% for the other functions, but only 5% were classified as sarcopenic.

Conclusion: The findings indicate that handgrip was useful to monitor strength in Jamaican elderly and that there might be a combined effect of LBM and FM on walking ability. Bioelectrical impedance which is the least expensive and cheapest of the methods can be useful for measurement of LBM where resources are low.

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The prevalence of maternal depression in a primary care setting, in a small Island state with a high gross national income per capita

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Objective: To measure the prevalence of maternal depression in a primary care setting in North-Central Trinidad and to determine its socio-economic, geographic and health-related risk factors.

Methods: A cross-sectional observational study to determine the point prevalence of maternal depression in women attending primary care facilities in North-Central Trini-

dad was conducted. The population consisted of pregnant women attending primary care facilities. The systematic sample of 400 women was taken. A two-part questionnaire was administered after informed verbal consent. The questionnaire collected demographic data and the nine-item Patient Health Questionnaire (PHQ) was administered.

Results: Six hundred and two patients were entered into the study, consisting of 441 antenatal women and 161 postnatal

women. The point prevalence of postpartum depression was 38.5 (95% CI: 31.0, 46.5) and prenatal depression 49.7%.

Conclusion: The study provides evidence that maternal depression is common in the developing world. Therefore, detection and treatment must be a priority as children born to mothers with depression have more behavioural problems, more psychiatric illness, more visits to paediatricians, lower IQ scores and attachment issues.