

Family Health

Chairpersons: M Thame, D Stephens

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Effect of overweight and obesity on pregnancy and birth outcomes

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Objectives: To determine the effect of maternal overweight and obesity on pregnancy and birth outcome.

Design and Methods: This prospective study invited 160 women who attended their first antenatal visit at the University Hospital of the West Indies to participate in the study between June 2012 and February 2013. Maternal demographics, socio-economic status, past medical and obstetric history, complications in pregnancy and birth outcome were collected. Body mass index (BMI) categories were created. Descriptive statistics reporting means \pm SD, analysis of variance (ANOVA), Chi-squared test and regression analyses to determine whether maternal BMI or weight were independent predictors of birth and placental size were performed.

Results: Of the 160 women recruited, 126 (78.8%) were used for final analysis. There was an even distribution of mothers in each BMI category. A significant difference in blood pressure (BP) was seen between normal weight and obese women (systolic BP: $p = 0.002$, diastolic BP: $p = 0.01$). There was no statistical difference in women who developed an illness in pregnancy and in the admission rates across BMI categories ($p = 0.92$; $p = 0.09$, respectively). There was no significant difference in birth outcome across BMI categories.

Conclusion: Overweight or class I obese women did not have an increased risk of adverse maternal and birth outcomes as compared to women with a normal BMI.

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Sociodemographic factors impacting infant mortality in The Bahamas

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Objective: To explore the influence of various socio-demographic factors on infant mortality in The Bahamas.

Design and Methods: The 2010 Bahamas Census was used as the data source. Females who had a live birth in the past year, with accompanying demographic, social and fertility characteristics, were examined using bivariate and logistic regression analyses (p -value ≤ 0.05).

Results: Overall infant mortality was 2.8% among 5011 females. Logistic regression revealed for all females that increased parity (OR 1.64; CI 1.36, 1.96), first child at 30 years or older (OR 1.85; CI 1.16, 2.96), five or more persons in household (OR 0.38; CI 0.26, 0.56), being married (OR 1.45; CI 1.01, 2.06) and being Bahamian (OR 2.47; CI 1.5, 4.06) were predictors of mortality. For females under 35 years, final predictors were increased parity (OR 1.41; CI 1.14, 1.74), being married (OR 1.86; CI 1.22, 2.83), Bahamian (OR 3.58; CI 1.76, 7.31), urban residence (OR 0.55; CI 0.34, 0.91) and five or more persons in household (OR 0.54; CI 0.35, 0.85). Females over 35 years had decreased odds of infant mortality with households of five or more persons (OR 0.36; CI 0.19, 0.67) and not being the head of household (OR 0.46; CI 0.27, 0.76).

Conclusions: Older age, smaller households and rural residence increased risk for infant mortality. Large household size appeared to be a protective factor regardless of age. Timely access to critical care for infants in rural areas is recommended, along with wider implementation of paternity leave in the workplace to increase maternal support.

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Parent and caregiver knowledge, beliefs and responses to seizures in Jamaican children

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Objective: To determine the knowledge and beliefs about seizures and actions during seizures of parents/caregivers of children hospitalized for convulsive seizures.

Design and Methods: This was a cross-sectional study of parents and caregivers of children with acute convulsive seizures hospitalized at the Bustamante Hospital, Kingston, Jamaica, between May 1 and October 31, 2013. Subjects were identified by admission records. Parents/caregivers were invited to participate. A questionnaire on the knowledge, beliefs and response of parents/caregivers during the child's current seizure episode was administered face to face. Data were analysed for frequencies; comparisons between groups using Chi-squared analysis for categorical variables, and the Mann-Whitney U-test for data not normally distributed.

Results: Fifty participants were enrolled; 39 (78%) mothers; mean age (SD) was 33.8 (10.1) years. All sought medical care first. Twenty-two (44%) had plausible beliefs about the cause of seizures. Twenty-seven (54%) knew of appropriate actions during a seizure, 10 (20%) knew of appropriate precautions and 11 (22%) responded appropriately during the seizure. Eleven (22%) reported receiving seizure education. Witnessing a previous seizure, education level and seizure education were positively associated with knowledge of seizures ($p < 0.05$). Socio-economic status was higher in those with plausible beliefs about seizures and lower in those who took appropriate action during a seizure ($p < 0.05$).

Conclusion: Parents/caregivers of children with convulsive seizures have appropriate healthcare seeking behaviour but inadequate knowledge. Seizure education should be prioritized to improve parental knowledge of and response to convulsive seizures.

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Use of the M-CHAT to screen for autism spectrum disorder among toddlers aged 16 to 30 months in Region 4 Guyana: A pilot study

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Objective: To assess whether the Modified Checklist for Autism in Toddlers (M-CHAT) was easily administered in a Guyanese clinic setting and how the findings in Guyana compared to international studies.

Design and Methods: The M-CHAT was used to screen for autism spectrum disorder (ASD) at nine health centres in Guyana over one month. An information session aimed at raising autism awareness in the community and to inform the parents/guardians attending well child clinic of the purpose of the study was conducted every morning at each clinic. A questionnaire was administered for demographic data and the family's socio-economic status was determined using the parent's education level, occupation and household income. The M-CHAT results were compared to child gender, parental age, parental ethnicity, socio-economic status, birth order of the child and the child's age on the date of administration of the test.

Results: Data from 415 respondents (parents/guardians) were used for analysis of the children under study (M 210, F 205). Ten per cent (10.6%) of the children failed the M-CHAT (M 10.5%, F 10.7%; $p = 0.93$) with 2.3% of these being high risk and 97.7% medium risk for ASD. Of the parameters tested, maternal ethnicity (Afro-Guyanese, $p = 0.03$) and paternal education (low, $p = 0.001$) were found to be significant.

Conclusion: While we were unable to re-test the population to confirm ASD, the trends observed for the M-CHAT were similar to those found in international studies.

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A parenting intervention delivered at routine primary health visits improved child cognitive development and parenting knowledge

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Objective: Several agencies have recommended integrating early child development interventions with health services. We developed and evaluated a parent training programme integrated into primary health visits.

Design and Methods: This was a cluster randomized trial conducted in Jamaica, Antigua and St Lucia, with health centre as the unit of randomization. Fifteen centres were randomized to control ($n = 250$ mother-child pairs) and 14 to intervention ($n = 251$). Participants were recruited at the 6–8 week child health visit. Intervention was provided at routine health visits from age 3–18 months and comprised short films of child development messages followed by discussion and demonstration led by community health workers and mothers' practise of activities. Nurses

distributed message cards and a few play materials. Primary outcomes were child development, measured two weeks after the 18 month visit, with the Griffiths Mental Development Scales and the Communicative Development Inventory (CDI).

Results: Eighty-five per cent of enrolled children were tested (control = 210; intervention = 216). Loss did not differ by group. Multilevel analyses showed significant intervention benefits for cognitive development (3.09 points; 95% CI 1.31, 4.87), effect size 0.30 SD. There were no benefits to language or hand and eye subscales, or CDI vocabulary score. Of six secondary outcomes, there was a significant benefit to parenting knowledge, treatment effect 1.59 (95% CI 1.01, 2.17), effect size 0.40.

Conclusion: An innovative parenting intervention, requiring no additional clinic staff or mothers' time, can be integrated into health services, with benefits to cognitive development and parent knowledge.

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Short-term impact of educational interventions on disease knowledge, illness perception and quality of life among Jamaican adolescents with sickle cell disease

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Objectives: To assess the effect of educational interventions on disease knowledge, illness perception (IP) and quality of life (QOL) of adolescents with sickle cell disease (SCD) in Kingston, Jamaica.

Methods: A randomized controlled intervention study was conducted among 150 adolescents (ages 13–19 years) attending for routine visits. Baseline disease knowledge, IP and QOL were assessed prior to randomization to three groups (Group A: routine care; B: educational booklet; C: booklet + formal counselling) and all measures were repeated three months later. Changes in outcomes were analysed using random effects analysis of variance models.

Results: There were 76 girls and 74 boys (mean age 16.1 ± 1.9 years; 77% had homozygous SS disease), of whom 63.3% were reviewed at three months. Baseline knowledge was higher with age (p -value: 0.007) and in girls (p -value: 0.024). Teen QOL was lower in girls (p -value: 0.038) and lower in severe disease (p -value < 0.001). Post-intervention knowledge scores were significantly higher within all three groups (increase of 1.68 in group A, 2.03 in B and 2.88 in C), but there was nil effect of interventions. There were no changes in QOL or IPs either. Adolescents who had higher knowledge scores had better

understanding that their illness was long lasting (Coef: 0.22; p -value: 0.008), and they perceived better personal control (Coef: 0.30; p -value < 0.001), as well as the effect of treatment (Coef: 0.12; p -value: 0.01) in managing their illness.

Conclusions: Participation in the study was associated with improved knowledge scores, but interventions *per se* appeared to have no effects.

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Epidemiological risk factors, knowledge and attitudes concerning osteoporosis among women in a primary care setting in Nassau, Bahamas

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Objective: To determine perimenopausal and postmenopausal women's epidemiological risk factors (including the calculated ten-year fracture probability of obtaining an osteoporotic fracture), knowledge and attitudes toward osteoporosis in The Bahamas, in a specialist family medicine practice setting.

Design and Methods: Using a cross-sectional survey design, researchers determined epidemiological risk factors, knowledge and attitudes concerning osteoporosis among Bahamian perimenopausal and postmenopausal women and calculated their Fracture Risk Assessment Tool (FRAX) scores for a major osteoporotic and hip fracture. Informed consent was obtained from all participants. The study took place in the family medicine clinic of the Public Hospital Authority and selected public health clinics. Data were collected using questionnaires and analysed using the Statistical Package for the Social Sciences (SPSS).

Results: The mean age of the 347 enrolled female participants was 57.91 (± 8.98) years and 76.9% knew what osteoporosis was but had less accurate knowledge about the risk factors. Less than half (47.6%) was not sure menopause was a contributing factor; 93.1% did not know the recommended daily calcium amount and 34% consumed calcium-rich meals daily, while 88.3% knew and practised walking as a preventative method. Attitudes were mainly positive as 82% thought it should be discussed with their physician. The FRAX scores were relatively low with only 20% requiring a bone density scan.

Conclusion: Overall, low FRAX scores indicated low fracture risk among Bahamian women. However, limited knowledge about related risk factors was also evident. Increasing awareness through public education campaigns, addressing modifiable risk factors and involving younger women can avoid major complications from osteoporosis in the future.

Correlates of vigorous physical activity in adolescents in five secondary schools in Trinidad

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Objective: To determine the correlates of vigorous physical activity in adolescents in Trinidad.

Design and Methods: Adolescents ($n = 344$) between 11 and 15 years from five secondary schools in north-central Trinidad were cross-sectionally surveyed. Behavioural risk factors: alcohol and smoking use, physical activity and diet, were obtained by a pilot tested interviewer-administered questionnaire. In addition, anthropometric measures were obtained on site at school. Multivariate logistical regression was used to analyse correlates of vigorous physical activity by gender.

Results: Fruit and vegetable intake ($p < 0.001$) and religion ($p = 0.034$) were correlated with vigorous physical activity in females. Lower waist circumference ($p = 0.014$), age ($p = 0.046$) and diastolic blood pressure ($p < 0.01$) were correlated with vigorous physical activity in males. Body mass index (BMI) for age data indicated that 41.3% of the children were overweight or obese. However, vigorous physical activity did not correlate with BMI for age in either gender. In the final logistic regression models, higher vigorous physical activity was associated with lower diastolic blood pressure in males ($p < 0.05$) and an increased daily intake of fruit and vegetables in females ($p < 0.001$).

Conclusion: Increased dietary intake of fruits and vegetables in females and lower diastolic blood pressure in males were associated with higher vigorous physical activity. Prospective studies are required to determine and clarify the relative importance of diet and physical activity in overweight adolescents and their risk of chronic metabolic disease.

Individual and school-level influences on moderate and vigorous physical activity in Grenadian adolescents

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Objective: The effect of school-level policies on the physical activity of Grenadian children had not been studied. The present study tested the hypothesis that schools with physical activity (PA)-promoting policies would positively impact student's levels of moderate and vigorous physical activity in Grenada.

Design and Methods: Multilevel analysis of a nationally representative sample of first-year students (*ie* Form 1) [$n = 138$] from the twenty-three secondary schools in Grenada were assessed as part of the Grenada School Nutrition Study (GSNS). At the individual level, physical activity was measured using Actigraph GT3X accelerometers. In addition to sociodemographic measures, height, weight and waist circumference (WC) were collected using standard anthropometric procedures. School-level measures were self-reported by school administrators. The school PA policy index included student-to-teacher ratio in physical education (PE) classes, minutes of PE per week, number of PE facilities/equipment, having at least one policy to address PE participation, having ≥ 1 policy for access to sports teams or activities, having a school board or council to address PE policies.

Results: No school-level variables were significantly related to student's moderate and vigorous physical activity (MVPA). Waist circumference was the only variable that significantly predicted MVPA in both boys ($p = 0.03$) and girls ($p = 0.005$). In girls, overweight/obesity was significantly associated with decreased MVPA ($p = 0.004$).

Conclusions: Contrary to findings in United States children, Grenada school-level policies and environments were not related to student's physical activity levels. Further research is needed to understand the variation in physical activity levels by schools in both male and female Grenadian students.