

6th Annual Research Day: September 2012 “Building Healthy Communities, The Research” “Agenda”

Changing Lifestyle: Making it the Community's Agenda

C Tucker

Florida Blue Endowed Chair in Health Disparities Research, Professor of Psychology and Community Health and Family Medicine, University of Florida

This presentation will identify core strategies and a guiding empowerment theory for promoting healthy lifestyles in culturally diverse communities. Two reliable and valid culturally sensitive assessment inventories for identifying the motivators, of and barriers to health promoting behaviours among community members will be described, and the roles of community members in developing these inventories will be discussed. The usefulness of these inventories in setting a community agenda for promoting healthy lifestyles will be emphasized. A community-based model programme (*ie*, the Health-Smart Behaviour Programme for Promoting Healthy Lifestyles) that is based on assessed motivators of and barriers to health promoting behaviours in a target community will be described and data showing the effectiveness of this programme will be presented. The implementation of the Health-Smart Behaviour Programme in diverse community settings (*ie*, churches, YMCAs, and community-based healthcare clinics) will be briefly discussed, and the specific roles of community members in implementing and institutionalizing this programme in these settings will be highlighted. Additionally, a testimonial video that features church members who participated in a church-based version of the Health-Smart Behaviour Programme discussing the positive impact of this programme on their engagement in a health promoting lifestyle will be shown.

The Prevalence of Elevated Blood Pressure in Adolescence in New Providence, Bahamas

CI Conliffe, M Frankson, F Smith, C Hanna-Mahase, M Oriakhi

Objective: This study aimed to determine the prevalence of elevated blood pressure (EBP) in adolescence in New Providence, The Bahamas.

Methods: A cross-sectional study was conducted on adolescents selected from Grades 9, 10 and 11 of all public high schools in New Providence, The Bahamas. A self-administered questionnaire was completed and anthropometric measurements done. Statistical analyses were performed using SPSS for Windows Release 17.0. Descriptive statistics were calculated. Correlation analyses were performed between blood pressure (BP), body mass index (BMI), age and gender to discern the relationship of BP to these indices. Adjusted odds ratios and their corresponding 95% CIs were calculated.

Results: Nine hundred and five students started the study and 785 students completed the study. The mean age was 14.57 years (\pm 1.153) and 87.6% of the participants were Bahamian. The prevalence of elevated systolic blood pressure (SBP) was 4.7% and elevated diastolic blood pressure (DBP) 6.6%. The prevalence of elevated blood pressure (EBP) was 8.9%. Participants mean SBP was 102.68 mmHg (\pm 13.92) and their mean DBP was 65.3 mmHg (\pm 8.89). Elevated blood pressure was more common among the grade nine students and the 14 year-olds had the largest proportion of EBP (40.3%). Both SBP and DBP increased with age in the male students. The prevalence of overweight/obesity was 34.3% (14.4% overweight, 19.9% obese). Body mass index, number of days per week eating fast food and perception of body weight were predictive of EBP. While BMI, age and perception of body weight were found to be predictive of SBP, only BMI was found to be predictive of DBP. Overweight and or obese students were 2.7 times more likely to have EBP. Elevated blood pressure was associated with BMI, family history of hypertension and parents overweight or obese status.

Conclusion: The estimated prevalence of EBP adolescent school children in New Providence, The Bahamas, was found to be relatively high. This study shows that school-based health programmes and health promotion endeavours should focus on adopting therapeutic lifestyle changes (TLC). This researcher advises yearly screening among Bahamian adolescents in an effort to reduce the already highly suspected increase of cardiovascular disease risk profile.

Determination of the Prevalence of Abnormal Glucose Tolerance in Obese versus Non-obese Adolescents in The Bahamas

KL Rivers, C Hanna-Mahase, S Peter, F Smith, M Frankson

Background: Obesity is directly associated with impaired glucose metabolism. Literature on the subject is abundant; however no local study has proven this association in adolescents residing in The Bahamas. The main goals of this project were to determine the incidence of impaired glucose tolerance (IGT) in adolescents in New Providence during the first quarter of 2012 and to evaluate the association of IGT with obesity.

Methods: We randomly recruited 873 adolescents (ages 13–19 years of age) from five separate high schools in New Providence between the months of January and April 2012. None were taking medications or using drugs that affected blood glucose levels. Information on demographics, lifestyle variables and socio-economic status (SES) was collected *via* a questionnaire. A digital scale was used to measure weight to the nearest 0.1 kg and height was measured with a stadiometer to the nearest 0.1 cm without shoes. The waist and hip circumferences were measured by a nurse. These anthropometric measures were used to calculate body mass index (BMI), waist-to-hip ratio (WHR) and waist-to-height ratio (WHtR). Participants were screened for IGT using glycated haemoglobin (HbA_{1c}) and a two hour OGTT (using 1.75 g/kg oral glucose to a maximum of 100 g). Blood samples were analysed using Dade Behring Dimension RXL Chemistry Analyser. The relationship between obesity and IGT was investigated using analysis of covariance (ANCOVA), linear and logistic regression analyses.

Results: A total of 861 adolescents completed the study and were included in the analysis. Overall, 15.0% of the students were overweight, 15.2% were obese and 7.9% were severely obese, respectively. Among the boys, 33.1 % was overweight or obese (BMI > = 85th percentile) and 40.4% of girls were overweight or obese. Thirteen per cent of non-obese adolescents consumed take-out/fast foods more than four times per week compared to 29.6% of obese adolescents who consumed this amount ($p < 0.001$). Thirty per cent of non-obese teens consumed non-diet soft-drinks more than four times a day, while 54.3% of obese adolescents consumed this amount ($p < 0.001$). Linear regression analysis suggests that take-out/fast foods and non-diet soft-drinks were positively associated with overweight and obesity, while physical activity was negatively associated with overweight and obesity. The overall, cumulative incidence of IGT was 16 100 cases per 100 000 adolescents *via* HbA_{1c} and was higher in males (19 900 cases) than in females (14 400 cases). A greater number of overweight and obese subjects were identified as having IGT compared to their non-obese counterparts. Glycated haemoglobin was more sensitive in detecting IGT compared to two hours of oral glucose tolerance test (OGTT). Nevertheless,

ANCOVA showed that overweight and obese adolescents had significantly higher two hour post-prandial glucose compared to normal adolescents. The predictive power of WC, HC, WHR, WHtR and BMI on risk of IGT based on HbA_{1c} and two hour oral glucose tolerance test were compared through receiver operator characteristic curve (ROC) analysis. The predictive power of WHR on risk of IGT was weakest based on either HbA_{1c} or two hour oral glucose tolerance test while the other four predictors had comparable predictive power with BMI being the strongest.

Conclusions: The data shows, that there is a strong positive association between IGT and obesity among adolescents residing in The Bahamas. This fact confirms the original hypothesis that obese adolescents are more likely to have IGT compared to non-obese adolescents. (Abbreviations: IGT, impaired glucose tolerance; BMI, body mass index; WHR, waist-to-hip ratio; WHtR, Waist-to-Height Ratio; ANCOVA, analysis of covariance; OGTT, oral glucose tolerance test; ROC, receiver operator characteristic curve; HbA_{1c}, glycated haemoglobin)

Healthy Lifestyle Adherence among Hypertensive Patients in the General Practice Setting in Princess Margaret Hospital, Nassau, The Bahamas

A Ferguson-Dyer, S Ferguson, K Smith, F Smith, C Hanna Mahase, M Frankson
Family Medicine

Objective: To assess healthy lifestyle adherence among hypertensives in the general practice setting in Princess Margaret Hospital and Agape House Family Medicine Clinic, Nassau, The Bahamas.

Study Design and Method: Using a cross-sectional design between June and October 2011, convenience sampling of 186 male and female patients with essential hypertension in the general practice and family medicine services was done on those older than 18 years of age. Surveying was with a primarily quantitative questionnaire assessing knowledge, attitudes and practice concerning adherence to lifestyle modification.

Results: Of 189 participants, 74.5% were females. Gender, employment and education showed some association to the sociodemographics highlighted in this study, 53.8% of employed persons ate fatty foods 1–2 times per week. For a few lifestyle practices, little association was seen between beliefs and practices. Concordant ones were belief in grain and low intake of cholesterol. Discordant relationships were seen in low fat and high cholesterol intake. While 43% believed in a low salt diet, 42% added salt to their meals. Most (> 60%) believed very much in non-pharmacological practices and the practices in which they actually performed. Proportionately, more Bahamians than other residents were clear about and strongly believed in low fat intake, fruit and vegetable intake and exercise as non-pharmacological methods. As a method of blood pressure

reduction, employed participants more strongly believed in low fat intake.

Concordant relationships were found between those told by a health professional that alcohol reduction reduces hypertension and those believing in low fat diets, fruit and vegetable consumption, less alcohol and more whole grain consumption. Those told to decrease alcohol, exercise, have a healthy diet and decrease weight believed in low fat diet, fruit and vegetables, decreased alcohol and whole grains. Those informed to decrease weight, quit smoking and decreased alcohol more so believed in several related lifestyle factors.

Conclusion: Family physicians can be reassured that in most instances counselling and lifestyle methods of managing hypertension is impactful on adherence to non-pharmacological management of hypertension, while bearing in mind that some sociodemographic differences in access, receptivity and adherence do exist.

Prostate Cancer Screening Clinics in The Bahamas

R Roberts¹, K Nottage²

¹FRCSC and ²Urology. UWI SCMR

Introduction: Prostate cancer is the most common and leading cause of cancer specific deaths in Bahamian males; advanced disease on initial presentation is the typical clinical profile. In 2001, the Cancer Society of The Bahamas advanced its community awareness prostate agenda to an annual initiative with both digital rectal prostate examinations and prostate specific antigen (PSA) testing at no charge on an annual basis.

Objective: This study sought to evaluate the factors related to attendance and the possible impact of this annual September campaign in The Bahamas for the period 2004 to 2009.

Results: During this period, there were 2682 clinic visits, with a three-fold annual increase in 2008 and 2009 compared to the initial years of onset; 15% of the men had repeat visits.

The awareness campaign suggests that clinic access, availability, consistency and credible physician service providers, incentivize these attendance achievements; the media campaign and directives from spouses and friends provide additional influences. Two thousand five hundred and sixty-six blood samples were taken for PSA testing prior to the digital rectal examination. The median PSA levels for the age group samples were 1.0 ng/mL for 40 to 49 years, 2.0 for 50 to 59 years, 2.2 for 60 to 69 years, 5.0 for 70 to 79 years and 5.0 for over 80 years.

Conclusion: A review of the clinical profile by D'Amico classification, comparing initial clinical presentation of the disease in The Bahamas for the year 2009 to that of 2005, denote a defined disease migration trend to an earlier stage presentation. Bahamian males will seek healthcare services for early detection of prostate cancer; initial clinical review

suggests this is translating to earlier stage disease on initial presentation.

Beyond the Life Style Interventions Examining the Role of the Social Determinants of Non-communicable diseases

G Eijkemans

PAHO/WHO Representative, The Bahamas and Turks & Caicos Islands

Beyond the lifestyle choices that contribute to the Non-communicable disease (NCD) burden globally, regionally and locally, there are root 'causes of the causes' that contribute to the risk factors. Through the use of the Framework on social determinants of health (SDH), the presentation will discuss the structural and intermediate determinants around the four main risk factors that all share a relationship with the four main groups of diseases that account for 80% of all NCD deaths: cardiovascular disease, cancers, chronic respiratory diseases and diabetes. These four risk factors are: the harmful use of alcohol, tobacco, physical inactivity and unhealthy diets. All of us live and make choices within the context of our environments, be they physical, economic, socio-cultural or political and the forces within these environments can affect the choices we make.

Why is one person more inclined to use alcohol in a harmful way, where another one chooses not to? What is the physical and built environment like? Are there 24-hour liquor stores in the vicinity? What about the economic environment? Are the prices of liquor regulated at the national level? Is alcohol consumption as common within the family unit? Community? Culture?

It is the answers to these questions that influence the choices and behaviour of the individual: these are the underlying determinants that can, many times without intention, impede or exacerbate the specific risk factors surrounding NCDs.

Dengue Fever Management in Paediatric Patients at the Princess Margaret Hospital in The Bahamas Following the 2011 Outbreak

D Gregoire, M Frankson, G Mcdiegan

Child Health

Background: The World Health Organization (WHO) reports that there are about 50 000 000 to 100 000 000 new cases of dengue per year and about 2.5 billion people live in the over 100 dengue endemic countries worldwide. Dengue infection in children may present as a spectrum, from asymptomatic disease to severe hypovolaemic shock and death. Last year, the most populated island of The Bahamas, New Providence (including the country's capital, Nassau), experienced a dengue outbreak.

Objective: The aim of this study is to document the clinical presentation of paediatric patients with dengue fever during the 2011 Bahamas outbreak. This study describes patient demographic features, their clinical course, management and outcome.

Method: A descriptive retrospective study was done. The accident and emergency record books were reviewed. All patients less than 18 years of age who were diagnosed with dengue fever during the 2011 outbreak were included in the study. Data extracted from the clinical records were entered into Microsoft Excel and were exported into the Statistical Package for Social Sciences (SPSS) version 17.0 (IBM-SPSS) for data analysis.

Results: Demographic factors such as gender, race and nationality did not affect patient presentation, management and outcome significantly. The most common symptoms elicited were headache (80.0%), retro-orbital pain (43.5%) and myalgia (47.1%). Laboratory abnormalities such as leukopaenia (90.0%) and neutropaenia (66.0%) were common findings. Thrombocytopenia occurred in 38.0% of patients tested but correlated poorly with haemorrhagic manifestations. Deranged liver function test and coagulation abnormalities were much less common findings. Thirty per cent of patients suspected to have dengue fever were admitted to hospital. The case fatality rate was 1.2%.

Conclusions: Further studies are needed to look at the clinical presentation of dengue fever in the very young child as present case definitions use symptomatology that is difficult to elicit.

Prevalence and Outcomes of Preterm Infants with Patent Ductus Arteriosus Treated Medically And Surgically

*S Kondapuram,
Department of Child Health*

Background: Patent ductus arteriosus (PDA) is an important problem in the preterm infants. Medical management is the first line of therapy in the management of these infants. The failure of closure of PDA by medical therapy requires surgical ligation which carries minimal risk.

Aim: The aim of our study is to describe the stratified by gender, age, PDA size, treatment modalities, outcomes and prevalence of PDA.

Methods: A retrospective case note review of 109 infants diagnosed with PDA between the gestational ages of 24 weeks to 36 weeks over the period of 2004 to 2010.

Results: In the study group of 109 infants, 51 (46.8%) were boys and 58 (53.2%) were girls. Among them the data was available for 106 infants. Fifteen (14.2%) girls and 12 (11.3%) boys had a small size PDA, 18 of each (17%) had a moderate size PDA, 23 (21.7%) girls and 20 (18.9%) boys had a large size PDA. In terms of response to medical treatment, there was no statistical significance among male

and female infants, boys 67.3% (n = 33) versus 61.5 % (n = 32) girls. With the increase in birthweight of the neonates, there was an increase in the closure of PDA which was statistically significant (OR = 1.002, 95% CI, >1.000, 1.004, p = 0.048).

Among 88 neonates, 73.8% (n = 65) responded after first three doses of indomethacin, 18.4% (n = 12) reopened, 21.5% (n = 19) had surgical ligation with 0.9 % (n = 1) post-surgical complication and 12 (13.6%) had spontaneous closure.

Conclusion: Role of indomethacin in closure of ductus is quite remarkable. The closure is better achieved in neonates with greater birth weight. Surgical closure is a safe option for PDA in which medical therapy has failed or contraindicated, which carries minimal risk.

Global initiative for asthma Guidelines Adherence among Physicians at The Princess Margaret Hospital, The Bahamas

*B Cooper, P Darville, C Dorsett, L Farrington, B Gaitor,
C Gomez, MA Frankson, K Moss, C Hanna-Mahase
Department of Family Medicine*

Objective: To determine adherence to the global initiative for asthma (GINA) guidelines by reviewing present practices among primary care physicians, primary care specialists and the pulmonologists located within Asthma Bay of the Accident and Emergency Department and the following clinics: family medicine, adult and paediatrics asthma clinic.

Design and Methods: An assessment tool was used to audit patient notes in Accident & Emergency, adult and paediatric asthma clinics and the Family Medicine Clinic. Data was then assessed for adherence to guidelines. Statistical analysis explored most common pharmacological practices of long-term and acute management, adherence to risk factor assessment, adherence to patient education recommendation and record of follow-up plans.

Results: Median age of patients was 31. There was no statistical significant difference between male and female patients. Most data originated from asthma bay of the Emergency Department. Asthma bay accounted for 92% of the total cases, family medicine clinic 3.7%, paediatric asthma clinic 3.2 % and adult asthma clinic 0.5%. As a result, 91% of the cases being reviewed were acute management visits by primary care physicians. And of these case reports, at least 70% of the reports assessed showed no documentation of 1) daytime or night-time symptoms 2) frequency of attacks, 3) risk assessment, 4) patient education or assess the level of severity according to the 2010 GINA guidelines.

Conclusion: The present study suggests that the documentation of current practice among primary care physicians in the government-based health services did not confirm adherence to the 2010 GINA guidelines.

Impact of the 'Providing Access to Continued Education' Programme on Repeat Teen Pregnancy in The Bahamas

VP Sakharkar, MA Frankson

Department of Obstetrics and Gynecology

Objective: 1: To determine the predictors of repeat teenage pregnancy. 2: To determine the impact of the Providing Access to Continuing Education (PACE) Programme in reducing repeat teenage pregnancy amongst its participants.

Design and method: This retrospective cohort study included 397 teenage mothers who attended adolescent health centre (AHC). One hundred and thirty-nine were registered in the PACE programme and 88 completed it. Data on age, ethnicity, education, sexual behaviour were analysed. Rate of repeat pregnancy within two-year period was compared between PACE attendees and PACE non attendees.

Results: Mean age was 16.4 ± 1.1 years. Median school grade and mean GPA was 11 and 1.97 ± 0.7 . The mean age at the first sexual activity was 14.9 ± 1.2 years. The mean age and number of sexual partners were 21 ± 4.3 years and 2 ± 1 , respectively. Overall repeat pregnancy rate was 39%, 37.4% amongst PACE registered and 31.8% amongst PACE completed mothers. There was no statistical difference in repeat pregnancy between not registered and registered mothers ($X^2 = 0.24$, $df = 1$; $p = 0.62$) as well as those who did not complete the programme and those who did ($X^2 = 3.02$, $df = 1$; $p = 0.075$). But the OR of 0.525 (95% CI: 0.26, 1.1) suggested that completion of the PACE programme have a moderate protective effect on reducing repeat pregnancy.

Conclusion: Age, ethnicity, education and sexual behaviour showed no correlation with repeat pregnancy. PACE programme did not reduce repeat pregnancy rate significantly. However, completion of the programme offered a moderate protection against it.

Prevalence of Group B Streptococcus Colonization in Pregnant Women in The Bahamas

N Graham, J Johnson

Department of Obstetrics and Gynaecology

Introduction: In pregnant women, Group B Streptococcus (GBS) colonization are associated with high morbidity and mortality in both mother and child.

Objective: To determine the prevalence of GBS colonization in a randomly selected group of pregnant women and to devise a screening and management protocol to reduce and possibly prevent early and late-onset GBS disease in our population.

Method: Six hundred and thirty-seven pregnant women attending major public poly-clinics in New Providence were randomly selected for GBS screening using the

universal method at 35–37 weeks gestation. Vaginal swabs were taken from the lower-third of the vagina, transported to the microbiology lab at room temperature, inoculated into a selective medium and later plated on blood agar. Pertinent data study variables were collected from patient records and a total of 492 patients were accepted in the study between February 2008 and August 2008.

Results: Patients ranged in ages from 14–45 years, with a mean age of 25.5 years. Sixty-nine per cent were Bahamians, 27% were Haitians, and the remaining 4% were of Jamaican, Guyanese and Peruvian descent. The majority of the patients were primigravidas with the average gestational age of 37 weeks. Of the women screened, 13.4% were found to be GBS positive with 81% occurring between the ages of 14–19 years and 86% occurring in primigravidas.

Conclusion: Group B Streptococcus colonization is high in The Bahamas therefore; the risk of GBS infection in our neonates is also high. In order to reduce this risk, proper prevention protocols are recommended including screening and intrapartum chemoprophylaxis. More studies are needed to determine which screening method is superior and more cost-effective for this population.

Exposure to Community Violence and Associated Symptoms of Psychological Trauma among Adolescents in New Providence, The Bahamas

L Rolle-Smith, C Hanna-Mahase, M Anthony, C Frankson,

D Curtis-Downes, S Pinder-Butler

Department of Family Medicine

Objective: This study examined exposure to violence in the community and symptoms of associated psychological trauma (depression, anger, anxiety, dissociation, post-traumatic stress and sexual concerns) among adolescents, in New Providence, The Bahamas.

Design and Setting: This cross-sectional study used a self-reporting anonymous questionnaire administered to tenth grade students at four public senior high schools during the 2011–2012 school year.

Participants: Three hundred and five students, aged 14 to 16 years, participated.

Results: The group was mostly Black (99%) with 130 (42.6%) males and 175 (57.4%) females represented. The most common forms of exposure to violence among the adolescents within the past year were as follows: 75.7% witnessed threats at school, 90.1% witnessed slapping, hitting, punching at school, 88.5% witnessed beatings in school, 62.5% witnessed someone else being attacked/stabbed with a knife, 31.9% saw someone pointing a real gun at someone else and 47.4% witnessed the sexual assault of another. More than one-year ago, 87.5% saw someone else being beaten-up, and 86.9% saw someone being slapped, punched or hit. Clinical symptoms of anger, 11.5%, sexual concerns, 31.5%, and sexual

distress, 34.8%, were statistically significant between genders. However, evidence of psychological trauma was determined for all clinical scales measured. The lowest number of students, 20 (6.6%) expressed symptoms of post-traumatic stress, while the highest number, 106 (34.8%) expressed symptoms of sexual distress affected. Witnessing a knife attack/stabbing and witnessing the sexual assault of someone else were positively associated with all psychological trauma clinical scales.

Conclusions: Bahamian adolescents are exposed to significant amounts of violence and may need to be routinely screened for this. Mental health services that address symptoms of psychological trauma should be accessible to children and adolescents.

Depression and Social Functioning Factors among Patients Attending the Community Counselling and Assessment Centre and Medical Out-patient Clinics at the Princess Margaret Hospital

*PS Burrows, E Combie, M Frankson
DM Psychiatry*

Introduction: Major depression is of global importance, given its disability burden, inclusive of the associated impairments in social functioning. There is limited research in The Bahamas with regard to depression and social functioning factors.

Aim: To determine the prevalence of depression, and social functioning factors of persons accessing healthcare at the Community Counselling and Assessment Centre (CCAC) and the medical out-patient clinics at the Princess Margaret Hospital (PMH).

Methodology: This was a cross-sectional study which used consecutive sampling. The three data collection instruments utilized to detect depression and social functioning factors in persons 18–65 years, attending the CCAC and PMH treatment centres were: (1) a sociodemographic questionnaire, (2) the Beck Depression Inventory (BDI-II) and (3) social functioning factors: excerpts from the Office of Population Censuses and Surveys of Psychiatric Morbidity in Great Britain. Data was analysed by statistical package for social services (SPSS).

Results: In this study, 289 persons (CCAC: 143; PMH: 146) participated, none refused; 64.7% were female, 35.3% were male; 45.3% were 18–45 years of age; 92.7% were black; 51.6% were single and 49.8% were employed full-time. The prevalence of depression was 34.3% for CCAC and 27.4% for PMH. Chi-squared analysis revealed statistically significant association between depression and the categories of gender, treatment centre and being divorced. Similar findings were observed for the depressed *versus* not depressed for sex, marijuana use, number of recent life events, activities involved in at and away from home, self-perceived social support ($p < 0.050$). Linear regression revealed that the variables statistically signifi-

cantly related to depression were sex, divorced marital status, part-time employment and number of recent life events.

Conclusion: One out of every three patients at CCAC and one in four patients at PMH was found to have depression. In keeping with other research, the results suggest significant associations which suggest increased risk for depression for females, the divorced, individuals in part-time employment, and those experiencing more recent life events. It is important to identify and address these risk factors when present in persons seeking treatment, as early identification and appropriate treatment may reduce the burden and consequences of untreated depression.

Evaluation of Client Satisfaction in Drug Rehabilitation Treatment at a Residential Treatment Facility in The Bahamas

*SR Bodha, N Clarke, M Frankson
DM Psychiatry*

Introduction: In The Bahamas there is a significant social and economic burden caused by drug addiction. There is limited research in The Bahamas with regard to patient satisfaction in this treatment programme. There is a need to measure patient satisfaction and its associated factors

Aim: To determine the degree of patient satisfaction in various dimensions toward the residential substance abuse treatment provided in the Sandilands Rehabilitation Centre.

Methodology: This was a cross-sectional study which used consecutive sampling. The three data collection instruments utilized to assess satisfaction and sociodemographic and behavioural factors in persons 18–60 years, admitted to the Drug Rehabilitation centre were: (1) client satisfaction questionnaire (CSQ8), (2) service satisfaction scale (SSS) and (3) behavioural symptom identification scale 32 (BASIS). Data was analysed by statistical package for social services (SPSS).

Results: In this study, 86 persons participated, 94.2% were males, 5.8% were female; 45.3% were 18–45 years of age; 94.2% were black; 75.6% were single, 43% attained some secondary school education and 70.9% were unemployed. Satisfaction was reported to be high on the client satisfaction questionnaire and service satisfaction scale, many patients did not report any impairment in life functioning. Spearman's Correlation analysis revealed statistically significant associations between CSQ and the categories of SSS. The BASIS showed a significant improvement on all life functioning variables after treatment. Except for age there were no significant associations between sociodemographics and the satisfaction scales used.

Conclusion: More than two-thirds of the patients at SRC reported being mostly satisfied with services. In keeping with other research, the results suggest significant associations and improved life functioning after treatment.

More research on patient satisfaction in drug treatment programmes are needed as part of the treatment outcome process with the view to enhance treatment and reduce negative consequences.

Taping Matters: The Effects of Kinesio Taping Compared with Rigid Taping on Pain Levels during a Functional Step-Down Test in Athletes with Patellofemoral Pain Syndrome

*K Sherwood-Wallace
Physiotherapy*

Background: Patellofemoral pain syndrome (PFPS) significantly affects the athletic population. Lateral patella tracking, a theorized cause of PFPS, has driven the extensive use of taping to treat PFPS. While rigid athletic taping (RT) has been the customary standard for treating PFPS over the years, the Kinesio Taping (KT) method has been increasing in popularity.

Objective and Method: This study's aim was to determine the effects of the above two taping methods on pain levels and functional performance in Bahamian athletes between the ages of 18 to 35 years with PFPS. Fifty-one participants (mean age = 26 ± 5 years; BMI = 24.8 ± 2.51) inclusive of 24 males and 27 females were tested in a randomized mixed factorial experimental study during three different knee taping conditions: (1) no taping (NT); (2) KT; and (3) RT (17 in each group). The main outcome measures were pain level as measured by a numerical pain rating scale (NPRS) and Step-Down test score as measured by single Step-Downs over 30 seconds from an eight inch block. Data was analysed using the statistical package for the social sciences (IBM SPSS version twenty for Windows). With SPSS the paired t-test, Wilcoxon signed rank and analysis of variance (ANOVA) were used to assess the statistical significance of differences.

Results: In this study results demonstrated that both methods of patella taping significantly reduced perceived pain levels (46% for KT and 39% for RT) and yielded higher step-test scores (25.8 ± 3 for KT and 22.5 ± 5 for RT) than the NT group (18.2 ± 0.89). The researcher found that although the KT group registered a greater decrease in perceived pain scores than the RT group, the differences found were not statistically significant. Perhaps more importantly, the KT group's performance in the Step-Down Test was statistically superior to the RT group as this interesting finding has implications for the performance of functional sport-related activities.

Conclusion: Consequently, the clinical application of KT appears more beneficial in relieving immediate pain and in enhancing the functional performance in athletes with PFPS.

Prevalence of Syphilis and Associated Risk Factors Involved among the HIV-infected Patients Attending the Outpatient Clinics at Princess Margaret Hospital, Nassau, The Bahamas

*JJO Rodgers, M Frankson, H Oralnder, C Hanna-Mahase,
P Gomez
DM Family Medicine*

Background: The pandemic of HIV/AIDS has taken a great toll on countries around the world. Studies have been done to closely examine this devastating disease and all risk factors associated with it, as well as other sexually transmitted infections that may affect the transmission of HIV. Syphilis, 'the great imitator', has been closely linked as a significant coinfection among HIV-infected persons, as its presentations may be atypical or asymptomatic, therefore increasing its likelihood of transmission, as well as influencing HIV acquisition.

Design and Methods: A cross-sectional study was conducted at the outpatient clinics, Infectious Diseases, Skin/Comprehensive and Family Medicine Clinics, in which the prevalence of syphilis was determined among the HIV-infected patients, as well as interviewer-assisted questionnaires were distributed to assess knowledge, attitudes to treatment and risky behavioural practices. Bloods were taken and processed for syphilis testing and results were forwarded to the researcher. Statistical package for the social sciences was used for statistical analysis, and inferential statistics were used to explore associations between high risk behaviours and positive syphilis results.

Results: There were a total of 271 participants in this study. The mean age was 43 (± 9.84) years with almost equal proportions of males and females. The overall syphilis coinfection prevalence rate was 11.8 (± 1.96)%, with higher prevalence seen among the males (15.2%). Most of the participants knew means of syphilis acquisition and were willing to receive treatment if they were coinfecting. Among the risk factors showing significant associations with positive syphilis coinfection status were alcohol use (Cramer's V = 0.193; $p = 0.002$), more than one sexual partner in past year (Cramer's V = 0.163; $p = 0.007$), sexual preferences, mainly MSM (Cramer's V = 0.447; $p = 0.001$), sex with commercial sex-workers by males (Cramer's V = 0.183; $p = 0.032$) and females (Cramer's V = 0.227; $p = 0.009$) and condom use (Cramer's V = 0.277, $p < 0.001$). More than 60% of the MSM were found to be positive for syphilis coinfection.

Conclusions: There were no statistically significant variations noted between syphilis coinfection rates and use of illegal drugs (marijuana, crack/cocaine) among the participants. Engaging in such high risk behaviours have been shown to increase risk of syphilis coinfection among HIV-infected patients, therefore aggressive screening for these practices and targeted education and counselling are needed to decrease this growing threat.

Further research is needed to determine other risk factors involved, as well as the impact that improved targeted educational programmes will make on the future behavioural practices of this at-risk group in The Bahamas. Overall, this study concluded that the prevalence of syphilis coinfection among the HIV-infected adults was higher than reported by other Caribbean countries, and significantly associated with high risk behavioural practices.

Causes of Death in the HIV Population Over Five Years, From 2005 to 2010 at the Cornwall Regional Hospital, Jamaica

N Forbes, G Barrow, M Walwyn, Y Frazer, J Keenan, M Aung, M Lee

Department of Medicine, Cornwall Regional Hospital, Jamaica and Department of Medicine, The University of the West Indies, Mona

Objective: To determine the causes of mortality in HIV-infected adults in the five-year period of 2005 to 2010 at a tertiary referral centre in Western Jamaica.

Methods: A retrospective study was conducted for the period of January 1, 2005 to December 31, 2010 at the Cornwall Regional Hospital, comprising patients over the age of 13 years, who had a diagnosis of HIV and had a recorded death certificate generated at Cornwall Regional Hospital and had a known underlying cause of death. Medical records were reviewed for all deaths in these patients. Persons with an unknown underlying cause of death were excluded from analyses. Statistical analysis was performed using SPSS 10.0 statistical software (SPSS, Chicago, IL, USA).

Results: Over the five-year study period, the population of interest was all 189 patients who had a diagnosis of HIV and died. The male:female ratio was 6:4, of which 25.3% had co-morbidities with hypertension being the most common, 43.7%. About 21.5% of HIV patients who died presented with early disease in the World Health Organization (WHO) stages 1 or 2 while 78.6% presented with advanced disease. Of those presenting with advanced disease, 30.1% were in WHO stage 3 and 48.5% WHO stage 4. The mean CD4 count at diagnosis was 95 cells/mm³, 28.3% of patients had a CD4 greater than 200 cells/mm³ at diagnosis. Of patients who presented with WHO stages 1 and 2 disease, 14.2% presented with sexually transmitted infections, 22.8% presented with skin manifestations and 14.2% presented with lymphadenopathy. Of those who presented with late disease or WHO stage 4 disease, 41.7% had *Pneumocystis jirovecii* pneumonia (PCP), 18.9% had central nervous system toxoplasmosis, 11.3% had HIV-associated nephropathy and 5% had cryptococcal meningitis. The average age at the time of death for our study population was 42.4 years. The majority of patients were in WHO category III and IV at death. At the time of death 5.6% of patients were WHO class I and 0.6% were in WHO class II.

At the time of death 21.2% of the patients were in WHO class III, while 72.6% were in WHO class IV. The average CD4 count at death was 75.5 cells/mm³. Only 4.7% of patients had a CD4 count of greater than 200 cells/mm³, at the time of death. Highly active anti-retroviral therapy (HAART) was given to 55.2% of the patients. *Pneumocystis jirovecii* pneumonia accounted for 42.9% (53/128) of deaths, followed by central nervous system (CNS) opportunistic infections, 27.3% of which had 23.4% CNS toxoplasmosis.

HIV nephropathy accounted for 16.4% of the causes of deaths while malignancies accounted for 4.6% of which 57.1% had B cell lymphomas. Of the causes of death that were not AIDS related, lower respiratory tract infections accounted for 24.1% of deaths; 52.3% of patients died within one year of being diagnosed with HIV while 68.3% died within two years. Of the non-HIV-related deaths, 56.4% occurred within one-year of the diagnosis and this was similar in the HIV-related deaths where 54.0% occurred within one year of diagnosis.

Conclusions: Patients living with HIV are presenting with late disease and dying of conditions that are AIDS related which may be preventable. Universal testing for earlier detection of HIV and implementation of treatment as well as efforts to improve medication compliance, compliance with follow-up and improved efforts for recognition and intervention in cases of clinical and/or immunological failure are urgently recommended.

The Use of Tofranil as a CD4 Immune Booster in Patients with HIV Disease

H Orlander, S Peter, M Jarvis, L Ricketts-Hall
Department Internal Medicine

Background: Prolactin is known to have significant immunomodulatory properties. Imipramine, a monoamine oxidase inhibitor, stimulates prolactin production because it decreases dopamine which inhibits secretion of prolactin.

Objective: The study objective was to determine if use of imipramine can result in immunological benefits for HIV-positive patients by restoration and preservation of immunological function.

Methodology: A cohort of 19 retroviral positive patients was identified for this prospective study which continued for a 28-week period. Three patients dropped out before the study began. Inclusion criteria accepted only patients on the same highly active antiretroviral therapy (HAART) regimen for a nine-month period and who had reached a plateau with respect to the CD4 cell count and also had no prior history of antidepressant use for a 12-month period. This study had a "before and after" design, patients serving as their own control. The study drug imipramine was prescribed for a 12-week period up to visit four and then discontinued for four-weeks (washout period) at which

time blood investigations were done at visit five. Finally, patients were prescribed the study drug for a further 12-week period to the end of the trial (visit 7).

Results: At the 95 per cent probability level, significant differences in average prolactin and CD4 levels from visit four to the end of the trial period were recorded. Results showed a trend of prolactin levels decreasing after washout ($p = 0.015$) and increasing by the end of the trial period once imipramine dispensation had recommenced ($p = 0.006$). With respect to the CD4 cell count, there was a significant increase after wash-out ($p = 0.022$).

Conclusions: These results indicate a trend to immune boosting in HIV-positive patients who had obtained the maximum response from HAART.

Brain Injury in The Bahamas

M Ekedede

Neurosurgery

Objective: To analyse the general incidence of traumatic brain injury (TBI) in The Bahamas during the study period.

Subjects and Methods: Data from the study period were obtained from the Accident and Emergency (A&E) Registry of Princess Margaret Hospital, Doctors Hospital and Rand Memorial Hospital and also from Dr Magnus Ekedede's, Neurosurgical Log Books for the period 1997 to 2012. Measurements of TBI-related hospitalization were made based on age, gender, type of injury, cause of injury and records of discharges/admissions.

Results: Over a period of 16 years, TBI has been on a steady rise in The Bahamas. Local statistics gathered from Princess Margaret Hospital, Doctors Hospital and Rand Memorial Hospital, indicate a steady increase in TBI Emergency Room admissions climbing from an average of 47 patients per month for the period 1997 to 2002, to an average of 55 patients per month during the period 2003 to 2009, to an average of 67 patients per month during the period 2010 to 2012. Of these A&E admissions, 70% of the patients were discharged home, 20% were admitted to the ward and 10% were admitted to the Intensive Care Unit (ICU). Of the 10% admitted to the ICU, 4% of the patients will die and 6% will survive. Of the 6% that survive, 4% will have major deficits (including major paralysis, major speech abnormalities, vegetative state, *etc*). The other surviving 2% had a good outcome. Of the 20% admitted initially to the ward, 3% were transferred to the ICU due to complications. Seventeen per cent were subsequently discharged from the ward. An average stay in the ICU is 30 days for severe TBI patients. The average stay in the ward is seven days for mild to moderate TBI patients. The average cost of a ventilated TBI patient in the ICU is roughly \$1500.00 per day for basic standard treatment (this cost does not include surgeries, special tests, special medications, *etc*). The average cost of a TBI patient admitted to the ward is about \$350.00 per day for treatment

only. Therefore, each TBI patient admitted to A&E then transferred to the ICU and then to the ward may cost an average \$47 400.00 before they leave hospital (this amount does not include surgeries, special tests, special medications, *etc* which dramatically increase the cost).

Conclusions: The upward trend that we are currently experiencing is unsustainable for any healthcare institution or facility or government run healthcare system because the costs involved are high and the impact on the socio-economic sector of society is dramatic.

Quality of Life In Chronic Venous Insufficiency: A look at Patients in the Cardiothoracic and Vascular Clinic, Outpatient Dressing Room and Agape Family Medicine Clinic of the Public Hospital Authority, New Providence, Bahamas

T Latique Roker-Davis

Family Medicine

Background: Chronic venous disorder (CVD) is a chronic, often debilitating disease whose quality of life (QoL) is often underestimated and often overlooked.

Objective: The main aim of this study was to evaluate the impact of CVD on patient- perceived QoL in New Providence, The Bahamas; and also to examine the risk factors associated with the disease.

Design and Method: A case-control study consisting of 408 patients, classified according to the clinical, aetiological, anatomical, pathophysiological (CEAP) clinical classification of CVD into (C) 0–1 was conducted in three public clinics. Participants were recruited from a primary care clinic, a specialty clinic, and an outpatient dressing room of the Public Hospital Authority in Nassau, The Bahamas. Quality of life was assessed by the generic Short-Form (SF)-36 questionnaire. The poorest QoL was adjusted internally by the SF-36 software programme as zero, and the best as 100. An additional questionnaire developed by the principal investigator was used to gather demographic information and past medical history and to assess possible risk factors associated with CVD in the study's population. The charts of the participants were reviewed to gather information on height, weight and diagnoses. A clinical examination of the lower limbs was also conducted to assess the diagnosis of CVD according to the CEAP classification.

Results and Conclusions: In the Bahamian population the results demonstrated that CVD is a progressive disease that significantly impairs and reduces the QoL of the individuals who suffer from it. It deserves more attention than is presently given by healthcare policy-makers. Persons living with the disease are affected by it to a greater extent in the physical realm initially and mentally as the disease advances. As a result, it is not merely a cosmetic problem, but rather a chronic disease. In this population, reduction in QoL has been shown to increase with worsening severity of

the disease and the disease appears to be more common in women. Several risk factors were identified in the Bahamian population including: family history of varicose veins, standing for long periods, obesity, female gender and increasing age. Further research may heighten the awareness of CVD and allow it to be considered in the same way as other chronic non-communicable diseases.

Prevalence of Undiagnosed Peripheral Arterial Disease in Adults Attending a Family Medicine Healthcare Centre New Providence, The Bahamas

*TR Dorsett-Johnson, M Frankson, D Farquason,
W Franics T Fountian, C Hanna-Mahase , G Holder*

Objective: To determine the prevalence of undiagnosed peripheral arterial disease (PAD) in adults attending a family medicine healthcare centre, New Providence, The Bahamas.

Methods: Using a cross-sectional study, patients 40 years and older were randomly selected and screened for PAD at the Princess Margaret Hospital's Family Medicine Clinic. Methods of data collection included an interviewer-assisted questionnaire, the Edinburgh Claudication Questionnaire, anthropometric measurements and ankle brachial index (ABI). Patients with incompressible ankle arteries were referred for toe brachial index (TBI).

Results: Of the 270 persons screened for PAD, seven persons met the exclusion criteria leaving 263 persons for data analysis. Females accounted for 82.1% (216/263), where males accounted for 17.9% (47/263). Overall prevalence of undiagnosed PAD was found to be 14.1% (37/263) where 64.9% had a low ABI (< 0.9) and 35.1% had a high ABI (> 1.4) and was confirmed with an abnormal TBI (< 0.7). Ninety per cent of persons were asymptomatic. The mean age of persons with PAD was 70.48 (± 1.90) compared to 60.41 (± 0.75) in persons without PAD ($p < 0.001$). Peripheral arterial disease prevalence was: 10.6% in males and 12.1% in females; 26.1% in the elderly vs 6.8% in non-elderly and ranged from 5.1% in persons 40–54 years old to 30.2% in persons > 75 years old (Cramer's $V = 0.367$, $p = < 0.001$). Peripheral arterial disease prevalence in diabet-

ics and non-diabetics was 17.9% and 13.7%, respectively ($p = 0.362$), and in persons with and without hypertension was 17.4% and 7.5%, respectively (Cramer's $V = 0.122$, $p = 0.048$).

Conclusions: There was a high prevalence of asymptomatic undiagnosed PAD. The strongest association for PAD was advanced age. There was a moderate association seen between hypertension and PAD. No significant associations were noted between PAD and diabetics. Even though PAD is defined as $ABI < 0.9$, we found that in this primary care setting, persons with a high ABI ($> 1/4$) also had PAD on confirmatory tests.

E-Matrix Injections for the Revision of Keloid Scars: A Novel Treatment for the Management of Keloids

S Garakaparthi

Introduction and Aims: Keloid scar formation is a significant problem for persons with highly pigmented skin. Recurrence rates following surgical excision of an existing keloid range between 45–100%. This study investigated a passive hydrogel scaffold in the prevention of recurrence following surgical excision of keloid scars as compared to recurrence rates reported in contemporary literature.

Subjects and Methods: Nineteen subjects with a total of 26 earlobe keloids were treated with a single injection of the hydrogel scaffold following surgical excision of the existing keloid. If visual or tactile evidence of scar formation was observed during the 12-month follow-up period, the suspected keloid volume was measured using impressions with dental alginate. The volume of the keloid was measured by filling the alginate impression with water and weighing the volume on a calibrated scale.

Results: The 12-month recurrence rate was 19.2% (5/26) and was demonstrated to be statistically superior ($p = 0.011$) to the scientific literature when evaluating keloid recurrence rates following surgical excision.

Conclusions: The hydrogel scaffold was demonstrated to be significantly effective in preventing keloid recurrence as compared to the scientific literature.