

# Annual Academic Day Undergraduate Student Presentations 2020

64<sup>th</sup>  
Annual Academic Day  
26-27 August 2020

SHADÉ BREEDT



Geriatric trauma in an academic hospital in Cape Town, South Africa: Are we that different?



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Annual Academic Day  
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LISA COMBRINK



MRI for paediatric retroperitoneal masses: diagnostic accuracy of the claw sign



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Annual Academic Day  
26-27 August 2020

LOUISO DU PISANIE



The Health and System Needs of a COPC Pilot-Project



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Annual Academic Day  
26-27 August 2020

INGE DU TOIT



Baseline characteristics and nutritional status of patients undergoing metabolic surgery as part of the OMIIT (Obesity and Metabolic surgery Initiative Tygerberg Hospital)



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ELIZABETH EARL



The experience of intergenerational interactions and their influence on the mental health of elderly retirement home residents



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JOHANNA EKSTEEN



Acral melanoma awareness in a group of South African final year medical students



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Annual Academic Day  
26-27 August 2020

HELEN HOENCK



Midgut neuroendocrine tumour presenting as orbital metastases



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26-27 August 2020

HIDEAKI LYLE KASAI



The use of web-based programmes in the teaching of anatomy: lecturer use and engagement



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CHRISTINE LE ROUX, DR KATHRYN STINSON, FAZILAH DAWOOD, NICOLE JANSEN VAN VUUREN, PROF ANGELA DRAMOWSKI



South African Medical Students' Perspectives on COVID-19 and Clinical Training



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Presenter: Petrus Malherbe  
Co-authors: Pierre Smit, Kartik Sharma, Michael McCaul



Guidance we can trust? The status and quality of pre-hospital clinical guidance in Sub-Saharan Africa: A scoping review



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EMMA MCCRYSTAL




Snack foods displayed at retail checkout counters in Cape Town, South Africa




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26-27 August 2020

FAHEEMA MOOLA



Knowledge, perceptions and self-reported compliance of hand hygiene amongst undergraduate medical students during their clinical years in a South African Referral Hospital



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CAMILLA PENNEFATHER, ANTON DOUBELL, TONYA ESTERHUIZEN, ERIC DECLOEDT



The 12-month period prevalence and cardiac manifestations of HIV in patients with acute coronary syndrome at a tertiary hospital in Cape Town, South Africa



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DEESHA BHOOJA, RAĒSAH DALVIÉ, SHIRLEY HUANG, ANGELA KURIAKOSE, BRAD SIMPSON, DAMIAN STANFORD



The effectiveness of aerobic and/or progressive resistance exercise compared to usual care on quality of life, anxiety, and depression in adults post stroke: a systematic review



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TOYOSI SOLANKE



Efavirenz-tenofovir-emtricitabine concentrations in obesity: a cross-sectional study



Note: Due to COVID-19, all Annual Academic Day staff and student presentations were in the form of posters in 2020

## **Health Systems Strengthening (4)**

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Annual Academic Day  
26-27 August 2020

**LOUISO DU PISANIE**



**The Health and System Needs of a COPC  
Pilot-Project**

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## HEALTH SYSTEMS STRENGTHENING (1)

### HEALTH AND SYSTEM NEEDS OF A COPC PILOT PROJECT

Louiso du Pisanie\* (Faculty of Medicine and Health Sciences - South Africa), Bob Mash (Faculty of Medicine and Health Sciences - South Africa)

Worldwide, there is growing concern for the escalating burden of non-communicable diseases. Risk factors, including obesity, are considered modifiable. Snack foods displayed at check-out points could lead to enticement resulting in higher levels of purchasing. The study assessed the type, price and display (inclusive of marketing strategies) of snack food items available at retail checkout counters in Cape Town, South Africa. A cross-sectional descriptive study was performed at 35 major food retailers, pharmacies and clothing retailers. Data was collected by standardized fieldworkers using a validated observational checklist. Descriptive and relevant inferential statistics were used. Unhealthy snack food items were predominantly displayed at checkout counters compared to healthy snack food items. Variety in packaging sizes and prices presented between store categories with grocery stores having the highest price range on snack items. Over 75% of stores had marketing present at the checkout, with a significant difference between marketing strategy and store types (ML-Chi2 = 75.03,  $p < 0.001$ ). Unhealthy food items had a greater presence of marketing with chocolate being the most marketed category overall. Marketing aimed at children were present for 10% (n=108) of all products assessed and of those cartoons/animations on snacks or beverage packaging accounted for 79% (n=86) of the products. Various marketing strategies which contributes to an obesogenic environment exist at checkouts. The need for policy to change marketing practices and the types of snack items at the checkout is of great importance and urgency to ensure the nature of checkout environments are conducive to consumer health.

64<sup>th</sup>  
Annual Academic Day  
26-27 August 2020

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**The use of web-based programmes in the teaching  
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## HEALTH SYSTEMS STRENGTHENING (2)

### THE USE OF WEB-BASED PROGRAMMES IN THE TEACHING OF ANATOMY: LECTURER USE AND ENGAGEMENT

**Hideaki Kasai\*** (Faculty of Medicine and Allied Health Sciences, Stellenbosch University - South Africa), Alwyn Louw (Centre for Health Professions Education, Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa), Karin Baatjes (Division of Clinical Anatomy, Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa)

**Introduction:** Knowledge of anatomy is core to the medical and allied health profession and safe clinical practice. Web-based anatomy teaching programmes can augment and optimise anatomy education, but the current implementation and use of such programmes are limited. **Aim:** The purpose of this study was to determine barriers that lecturers face in using web-based programmes in the teaching of anatomy. **Methods:** A qualitative study which followed a participatory action research method, was utilised. All anatomy lecturers at the division of Clinical Anatomy were invited to participate in the study. Participants were individually interviewed to investigate barriers that discourage the use of web-based programmes. The findings were used to formulate a training workshop. Post-workshop interviews were used to evaluate its impact. Thematic analysis was used when interpreting and postulating patterns in the data set. **Results:** Barriers that dissuaded lecturers from using technology was identified and classified as External- and Internal barriers. External barriers hinder the lecturer daily and are usually institution-specific. Internal barriers are factors residing within the lecturer relating to the personality and teaching style of the lecturer. Benefits of using web-based programmes were classified as student-, lecturer- and visual benefits. These benefits could motivate the use of technology to teach anatomy at universities. Regular and appropriate workshops with a dedicated facilitator were found to be essential to support lecturers using these programmes. **Conclusion:** The present study identified barriers and offered some solutions in the use of web-based programmes to enhance anatomy education. The findings should be used to motivate lecturers and institutions, alike to adopt the addition of such programmes onto their teaching and learning platform. This will serve to diversify the teaching offering and the learning opportunities for students. Updating in-house training sessions in the form of workshops will keep lecturers engaged and informed of new developments.

64<sup>th</sup>  
Annual Academic Day  
26-27 August 2020

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PROF ANGELA DRAMOWSKI**



**South African Medical Students' Perspectives on  
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## HEALTH SYSTEMS STRENGTHENING (3)

### SOUTH AFRICAN MEDICAL STUDENTS' PERSPECTIVES ON COVID-19 AND CLINICAL TRAINING

**Christine Le Roux\*** (Stellenbosch University - South Africa), Kathryn Stinson (Stellenbosch University - South Africa), Fazilah Dawood (Stellenbosch University - South Africa), Nicole Jansen van Vuuren (University of Pretoria - South Africa), Angela Dramowski (Stellenbosch University - South Africa)

**Background:** Stroke is one of the leading causes of disability globally and in Sub Saharan Africa. Emerging evidence suggests that physical exercise might have a positive effect on mental health and quality of life (QOL) however, uncertainty exists regarding which type of exercise has a greater impact on patient outcomes. **Objectives:** To determine the effectiveness of aerobic exercise and/or progressive resistance exercise (PRE) compared with usual care, on QOL, depression and anxiety in adults post stroke. **Methodology:** A systematic review of four randomised clinical trials (RCTs) were conducted. Seven computerised bibliographic databases were searched and are mentioned within our systematic review. The quality of the eligible trials were critically appraised using the PEDro scale. **Results:** Two studies implemented aerobic exercise and two PRE. The exercise programs differed in format and in duration. Usual care consisted of general medical care administered by their physician, antidepressant medication and education classes. The intervention group (IG) was favoured over the control group (CG) with regards to depression. With regards to QOL outcomes, results were mixed and only one subset of data favoured the IG. Statistically, no significant differences were found between the IG and CG for anxiety outcome levels. **Conclusion:** Level II evidence suggests that PRE and aerobic exercise has an effect in reducing depressive symptoms, however the results suggest that anxiety symptoms are not improved in the same population. The results regarding QOL are mixed.



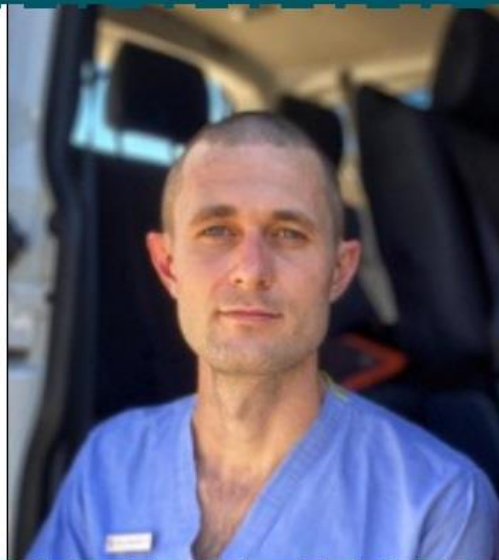
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# Annual Academic Day

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**Presenter: Petrus Malherbe**

**Co-authors: Pierre Smit, Kartik Sharma, Michael McCaul**



**Guidance we can trust? The status and quality of pre-hospital clinical guidance in Sub-Saharan Africa:  
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## HEALTH SYSTEMS STRENGTHENING (4)

### GUIDANCE WE CAN TRUST? THE STATUS AND QUALITY OF PREHOSPITAL CLINICAL GUIDANCE IN SUB-SAHARAN AFRICA: A SCOPING REVIEW

**Petrus Malherbe\*** (University Stellenbosch - South Africa), Pierre Smit (Hamad Medical Corporation - Qatar), Kartik Sharma (McMaster Health Forum - Canada), Michael McCaul (Division of Epidemiology and Biostatistics, Department of Global Health, Stellenbosch University - South Africa)

**Introduction:** High rates of trauma in South Africa (SA) predominantly affect the youth, yet the geriatric population is not exempt.<sup>1</sup> In addition to inherent challenges of age, elderly trauma patients are further compromised by resource constraints.<sup>2</sup> We aim to assess injuries and outcomes in elderly patients admitted to a tertiary Trauma unit in SA. **Material & Methods:** A retrospective record review was done of all patients 60 years and older, admitted to the Trauma unit over an 8-month period. Injury Severity Score (ISS), mechanism of injury (MOI), in-hospital complications and length of hospital stay were documented. Results: 275 patients (mean age: 72 years; 57% female) were included with mean ISS of 8. The most frequent MOIs included non-traumatic falls (54%), falls from height (10%), motor-vehicle collisions (9%), pedestrian vehicle collisions (7%), and blunt injuries (8%, 87% intentionally inflicted). Eighty patients (30%) experienced at least one in-hospital complication. The mortality rate was 7%. The mean length of hospital stay was 7 days. **Conclusions:** Despite the known vulnerabilities of the elderly, the mortality rate and ISSs of this cohort were relatively low. However, when compared to first world literature, intentionally inflicted injuries and certain preventable MOIs (e.g. fall from height and pedestrian vehicle collisions) were common<sup>3-4</sup>, underscoring the importance of addressing the causative factors. References: 1. Victims of Crime Survey 2018 [Internet]. Pretoria: Published by Statistics SA. Available from: <http://www.statssa.gov.za/publications/P0341/P03412018.pdf>. 2. Bonne S, et al. Trauma in the Older Adult. *Clin Geriatr Med.* 2013;29:137-150. 3. Ferrera PC, et al. Outcomes of admitted geriatric trauma victims. *Am J Emerg Med.* 2000;18:575-580. 4. Tepas JJ, et al. Elderly injury: A profile of trauma experience in the Sunshine (Retirement) State. *J Trauma.* 2000;48:581-584.

## **Infectious Diseases (3)**

64<sup>th</sup>  
Annual Academic Day  
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**FAHEEMA MOOLA**



**Knowledge, perceptions and self-reported compliance of  
hand hygiene amongst undergraduate medical students  
during their clinical years in a South African Referral  
Hospital**

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## INFECTIOUS DISEASES (1)

### KNOWLEDGE, PERCEPTIONS AND SELF-REPORTED COMPLIANCE OF HAND HYGIENE AMONGST UNDERGRADUATE MEDICAL STUDENTS DURING THEIR CLINICAL YEARS IN A SOUTH AFRICAN REFERRAL HOSPITAL

**Faheema Moola** (Faculty of Medicine and Health Sciences - South Africa), Sharon Kling (Department of Paediatrics and Child Health, Faculty of Medicine and Health Sciences)

Title: MRI for paediatric retroperitoneal masses: diagnostic accuracy of the claw sign. **Background:** The claw sign is widely advocated as a discriminant of renal versus non-renal origin of a tumour. However, the accuracy of the sign in MRI is unknown and is potentially hindered by inferior spatial resolution compared to CT, and the larger size of tumours at presentation in developing countries. **Objectives:** To define and evaluate the claw sign in differentiating renal from non-renal retroperitoneal masses in children undergoing MRI. **Methods:** A definition of the claw sign was proposed. MRI studies, clinical and laboratory records of 53 children undergoing work-up of retroperitoneal tumours were reviewed to test the diagnostic accuracy, inter- and intra-observer reliability. Three tumour-mass interface characteristics considered inherent to the claw sign were tested: 1) a smooth tapering kidney edge blending continuously with the tumour, 2) absence of infolding of the kidney, and 3) an obtuse superficial angle. In addition, an audit of local practice was performed to assess the application of the claw sign. Results: The claw sign's sensitivity, specificity, negative predictive value and positive predictive value was 97%, 74%, 83% and 94% respectively. The intra- and interrater reliability for tumour-mass interface characteristics was found to be statistically significant. (Cohen kappa [95% CI]  $P < 0.0001$ ) **Conclusion:** A tapered kidney edge, absent infolding of the kidney edge, and an obtuse external kidney-tumour interface are all important characteristics of the claw sign. Intra- and interrater reliability is moderate to strong for all characteristics and overall impression of the claw sign, the claw sign is therefore highly sensitive in the accurate placement of an intrarenal mass but lacks specificity.

64<sup>th</sup>  
Annual Academic Day  
26-27 August 2020

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**The 12-month period prevalence and cardiac  
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## INFECTIOUS DISEASES (2)

### THE 12-MONTH PERIOD PREVALENCE AND CARDIAC MANIFESTATIONS OF HIV IN PATIENTS WITH ACUTE CORONARY SYNDROME AT A TERTIARY HOSPITAL IN CAPE TOWN, SOUTH AFRICA: A RETROSPECTIVE CROSS-SECTIONAL STUDY

**Camilla Pennefather** (Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa), Tonya Esterhuizen (Division of Epidemiology and Biostatistics, Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa), Anton Doubell (Division of Cardiology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa), Eric Decloedt (Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch Univer - South Africa)

**Introduction** Community orientated primary care (COPC) is an internationally studied model for structuring primary healthcare services. Four pilot sites were identified in the Western Cape to test COPC in a local context. This analysis describes the data captured by the Eastridge site and comments on key elements of project success. **Methods** The database consisted of an excel spreadsheet that contained information from household assessment forms (HAFs). The data was cleaned by manually removing grossly incomplete entries and standardizing headings. The Statistical Package for Social Sciences V.25 was used for analysis by the two investigators. Numerical data was reported as median and interquartile ranges. Categorical data was reported frequencies and percentages. **Results** People in Eastridge mostly lived in formal dwellings that had electricity, piped water and flush toilets. Health data showed that hypertension, diabetes and asthma were the most prevalent non-communicable diseases (NCDs). NCDs combined with a high smoking prevalence constituted a high cardiovascular and cerebrovascular disease risk. Households were up to date with immunisations and vitamin A supplementation. A small dataset pertaining to maternal health, TB/HIV and referrals were captured. Our study also reports on the importance of community healthcare worker (CHW) training and the need of an interactive data capturing and reporting system. **Conclusion** COPC is a promising modality to structure local healthcare services. The training of CHWs and an interactive health information system are key facilitators to project success. At Eastridge we recommend a health promotion program that focuses on risk factors for cardiovascular disease.

64<sup>th</sup>  
Annual Academic Day  
26-27 August 2020

**TOYOSI SOLANKE**



**Efavirenz-tenofovir-emtricitabine concentrations in  
obesity: a cross-sectional study**

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## INFECTIOUS DISEASES (3)

### EFAVIRENZ-TENOFOVIR-EMTRICITABINE CONCENTRATIONS IN OBESITY: A CROSS-SECTIONAL STUDY

**Toyosi Solanke** (Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa), Festus Kamau (Centre for Cardiometabolic Research in Africa (CARMA), Division of Medical Physiology, Department of Biomedical Sciences - South Africa), Tonya Esterhuizen (Biostatistics Unit, Division of Epidemiology and Biostatistics, Department of Global Health, Stellenbosch University, Ca - South Africa), Gary Maartens (Division of Clinical Pharmacology, Department of Medicine, University of Cape Town, South Africa - South Africa), Saye Khoo (Department of Molecular and Clinical Pharmacology, University of Liverpool - South Africa), John Joska (Division of Neuropsychiatry, Department of Psychiatry and Mental Health, University of Cape Town, South Africa - United Kingdom), Tracy Kellermann (Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa), Hans Strijdom (Centre for Cardiometabolic Research in Africa (CARMA), Division of Medical Physiology, Department of Biomedical Sciences - South Africa), Eric Decloedt (Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University - South Africa)

The incidence of obesity is increasing worldwide including in HIV-positive patients. Antiretroviral pharmacokinetic data in obesity and the impact on immunovirological outcomes (CD4 count and viral load) are limited. **Objectives** To measure antiretroviral drug concentrations in obese and non-obese HIV-positive patients treated with efavirenz-tenofovir-emtricitabine. To determine pharmacokinetic differences across various indicators of abdominal obesity and to determine associations with immunovirological outcomes. **Methods** We conducted a retrospective cross-sectional secondary data analysis of two cohort studies. We measured mid-dose efavirenz, 8-hydroxy-efavirenz, tenofovir, and emtricitabine concentrations. We analysed antiretroviral concentrations according to obesity defined by published cut-offs by sex for waist circumference and waist-hip ratio. We compared immunovirological outcomes in the different groups. **Results** We included 213 participants: obesity was detected in 43/211 using BMI, 112/209 using waist circumference, and 106/170 using waist-hip ratio. The concentration of all the antiretrovirals were lower in the participants with BMI  $\geq 30$  kg/m<sup>2</sup>, but was most striking for efavirenz (medians: 1752.3 ng/ml vs 2342.9 ng/ml, P=0.002). Using waist circumference, efavirenz (medians: 1845.8 ng/ml vs 2571.2 ng/ml, P<0.001), tenofovir (medians of 64.5 ng/ml vs 72.8 ng/ml, P=0.025), and emtricitabine (medians: 156.5 ng/ml vs 220.9 ng/ml, P=0.002) concentrations were lower in the obese population. However, 8-hydroxy-efavirenz concentrations were similar in the non-obese and obese participants. Using waist-hip ratio, the concentration of all the antiretrovirals were lower in the obese population, but was most striking for emtricitabine (medians: 173.6 ng/ml vs 225.3 ng/ml, P=0.025). There were no immunovirological differences across the categories. **Conclusion** We found lower antiretroviral concentrations in participants with obesity determined by BMI, waist circumference, and waist-hip ratio groups; the differences were most striking in participants with obesity determined by increased waist circumference. The clinical relevance of lower concentrations is not clear as there was no associated difference in immunovirological outcomes.

## **Mental Health & Neurosciences (2)**

64<sup>th</sup>  
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**ELIZABETH EARL**



**The experience of intergenerational interactions and  
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## **MENTAL HEALTH & NEUROSCIENCES (1)**

### **THE EXPERIENCE OF INTERGENERATIONAL INTERACTIONS AND THEIR INFLUENCE ON THE MENTAL HEALTH OF ELDERLY RETIREMENT HOME RESIDENTS.**

**Elizabeth Earl** (Stellenbosch University - South Africa), Debbie Marais (Stellenbosch University - South Africa)

The mental health of an increasing ageing population is an important part of healthcare that is often overlooked. Much research has explored means to enrich the lives of residential-living elderly, which include approaches such as the Eden Alternative, but this has been minimally explored in the South African setting. This study is a cross-sectional, qualitative study with a quantitative component that assessed common mental health disorders (CMDs) in the elderly of a retirement home in Cape Town, South Africa and described the experiences of these residents of intergenerational interactions with playschool children at the facility. Participants completed a questionnaire that included demographic and mental health information as well as two screening scales: the Geriatric Depression Scale (GDS) and the Geriatric Anxiety Scale (GAS). A semi-structured interview was then held individually with each participant. Ten participants were recruited for the study. The quantitative data was analysed using descriptive statistics. The qualitative data was analysed with thematic analysis using inductive coding. The prevalence of depression and anxiety was 40 percent and 30 percent respectively and there was limited awareness of non-pharmacological therapy available at the facility. The intergenerational interactions were generally experienced positively but were influenced by participants' preconceptions of children. Themes that emerged included belonging, sense of purpose, reminiscence of youth, and affective experience. This study concludes that intergenerational interactions can positively influence the mental well-being of the elderly retirement home residents. Recommendations are made for successful implementation of intergenerational interventions.

64<sup>th</sup>  
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## MENTAL HEALTH & NEUROSCIENCES (2)

### THE EFFECTIVENESS OF AEROBIC AND/OR PROGRESSIVE RESISTANCE EXERCISE COMPARED TO USUAL CARE ON QUALITY OF LIFE, ANXIETY AND DEPRESSION IN ADULTS POST STROKE: A SYSTEMATIC REVIEW

**Deesha Bhoolia** (Stellenbosch University - South Africa), Ra'eesah Dalvie (Stellenbosch University - South Africa), Shirley Huang (Stellenbosch University - South Africa), Angela Kuriakose (Stellenbosch University - South Africa), Damian Stanford (Stellenbosch University - South Africa), Brad Simpson (Stellenbosch University - South Africa)

**Background:** Acral melanoma (AM) arises on the sun-protected skin of the palms, soles and nails. It is associated with a poorer prognosis than other melanoma subtypes due to high rates of delayed diagnosis.[3,15] Sun-induced forms of melanoma are much more common in lightly pigmented people, however AM affects all skin types equally. **Objective:** To determine AM knowledge of a group of South African, final year medical students. **Methods:** This was a quantitative, cross-sectional study. A researcher-administered questionnaire consisting of 20 clinical images of skin lesions requiring a diagnosis and management plan was distributed. Responses to the six images of melanomas (4 AM and 2 non-acral) were analysed. Further questions to measure AM knowledge and related issues were included. **Results:** 101 participants' answers were gathered and analysed. Only 7.92% of the participants diagnosed all the melanomas; 47.52% correctly diagnosed >50% of the melanomas. While 77.23% of the participants identified all non-acral melanomas correctly, only 8.91% identified all AMs. However, the participants selected the appropriate management plan (urgent referral) in > 90% of correctly identified cases of non-acral melanoma and AM. The most common misdiagnosis for AM was trauma in 24.75% of cases. **Conclusion:** This study demonstrates that awareness of AM among this group of final year medical students is unacceptably low. This is consistent with high levels of primary misdiagnosis of AM reported in the literature. Fortunately, these students are sufficiently cautious that they would manage AM correctly. Urgent attention to AM awareness of students at this institution is required.

## **Non-Communicable Diseases (5)**

64<sup>th</sup>  
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LISA COMBRINK



MRI for paediatric retroperitoneal masses:  
diagnostic accuracy of the claw sign

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## **NONCOMMUNICABLE DISEASES (1)**

### **MRI FOR PAEDIATRIC RETROPERITONEAL MASSES: DIAGNOSTIC ACCURACY OF THE CLAW SIGN**

**Lisa Combrink** (University of Stellenbosch - South Africa), Kenneth Bevis-Challinor (Registrar, Radiodiagnosis, Tygerberg - South Africa)

Metastasis of a neuroendocrine tumour (NET) to the orbit is a rare occurrence, with published data limited to a few case reports. Orbital involvement usually presents with proptosis and decreased ocular mobility. Timing, in relation to the presentation of the primary tumour (PT), varies. The authors report a case of a 58-year-old female whose clinical presentation of orbital metastases preceded clinical suspicion of a midgut NET. Her presentation was with severe headaches and bilateral ptosis, histologically proven to be due to orbital muscle infiltration. The PT location was determined from the histopathological markers on orbital muscle biopsy, which suggested a gastrointestinal origin. Abdominal computed tomography (CT) was in keeping with a midgut NET with features characteristic of a desmoplastic reaction. Additional CT findings were widespread metastases, corroborated by nuclear imaging. The patient developed carcinoid syndrome and subsequently underwent surgical resection of the PT due to acute bowel obstruction. Her carcinoid symptoms and ocular findings improved on continued somatostatin receptor analogue therapy, but she sadly died within one month following surgery.

64<sup>th</sup>  
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**JOHANNA EKSTEEN**



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## NONCOMMUNICABLE DISEASES (2)

### ACRAL MELANOMA AWARENESS IN A GROUP OF SOUTH AFRICAN FINAL YEAR MEDICAL STUDENTS

Johanna Eksteen (primary investigator) (University of Stellenbosch - South Africa)

**Introduction:** Knowledge of anatomy is core to the medical and allied health profession and safe clinical practice. Web-based anatomy teaching programmes can augment and optimise anatomy education, but the current implementation and use of such programmes are limited. **Aim:** The purpose of this study was to determine barriers that lecturers face in using web-based programmes in the teaching of anatomy. **Methods:** A qualitative study which followed a participatory action research method, was utilised. All anatomy lecturers at the division of Clinical Anatomy were invited to participate in the study. Participants were individually interviewed to investigate barriers that discourage the use of web-based programmes. The findings were used to formulate a training workshop. Post-workshop interviews were used to evaluate its impact. Thematic analysis was used when interpreting and postulating patterns in the data set. **Results:** Barriers that dissuaded lecturers from using technology was identified and classified as External- and Internal barriers. External barriers hinder the lecturer daily and are usually institution-specific. Internal barriers are factors residing within the lecturer relating to the personality and teaching style of the lecturer. Benefits of using web-based programmes were classified as student-, lecturer- and visual benefits. These benefits could motivate the use of technology to teach anatomy at universities. Regular and appropriate workshops with a dedicated facilitator were found to be essential to support lecturers using these programmes. **Conclusion:** The present study identified barriers and offered some solutions in the use of web-based programmes to enhance anatomy education. The findings should be used to motivate lecturers and institutions, alike to adopt the addition of such programmes onto their teaching and learning platform. This will serve to diversify the teaching offering and the learning opportunities for students. Updating in-house training sessions in the form of workshops will keep lecturers engaged and informed of new developments.

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**HELEN HOENCK**



**Midgut neuroendocrine tumour presenting  
as orbital metastases**

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## NONCOMMUNICABLE DISEASES (3)

### MIDGUT NEUROENDOCRINE TUMOUR PRESENTING AS ORBITAL METASTASES

**Helen Hoenck** (Stellenbosch University - South Africa), **Wilhelmina Conradie** (Stellenbosch University - South Africa), **Magda Conradie** (Stellenbosch University - South Africa), **Ankia Coetzee** (Stellenbosch University - South Africa)

**Background** The COVID-19 pandemic has disrupted clinical training of medical students globally. **Methods** To determine how modification to medical student training at Stellenbosch University (SU) has been perceived, we conducted a cross-sectional survey of students' attitudes and perceptions regarding the COVID-19 pandemic and clinical training. SU Bachelor of Medicine and Surgery (MB,ChB) students in years IV-VI were invited via email to participate in an anonymous 34-question survey in June 2020. Responses to open-ended questions were coded by three independent researchers to identify emerging themes using framework analysis. **Results** Questionnaires were completed by 279/906 (30.8%) eligible students. Most respondents (88%) were receiving online teaching but only 15% were satisfied with the quality thereof. Only one-third of all years (34%) supported resumption of in-person training. Eighty-three percent of the final year students had already returned to the clinical platform. Seventy-seven percent felt that the current quality of in-hospital teaching was also poor and were concerned about attaining the competence to practice independently. Although most respondents (93%) reported having received adequate training in the use of PPE, only 65% had continuous access to all the PPE they needed. Half (50%) reported a lack of COVID-19 symptom screening in the clinical areas and 58% of students were conducting daily symptom self-monitoring. Only 31% of respondents supported early graduation of MBChB VI students to augment the national health workforce during the COVID-19 pandemic, while 28% were undecided and 41% opposed the notion. **Conclusion** Ongoing engagement regarding online and clinical teaching and COVID-19 risk mitigation measures is important to ensure optimal quality of learning and support to medical students during the pandemic.

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**MISHA ERASMUS, FRANDENE LATEGAN, CHRIS-  
MARI LOMBAARD, NINA McCARTHY, MARNUS  
VAN NIEKERK, JEANDRI OLIVIER**

**The effectiveness of health literacy interventions  
compared to standard care in adults with cardiovascular  
disease living in low-to-middle income countries: A  
systematic review and meta-analysis**

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## NONCOMMUNICABLE DISEASES (4)

### THE EFFECTIVENESS OF HEALTH LITERACY INTERVENTIONS COMPARED TO STANDARD CARE IN ADULTS WITH CARDIOVASCULAR DISEASE LIVING IN LOW-TO-MIDDLE INCOME COUNTRIES: A SYSTEMATIC REVIEW AND META-ANALYSIS.

**Frandene Lategan** (Div. of Physiotherapy, Stellenbosch University - South Africa), Misha Erasmus (Div. of Physiotherapy, Stellenbosch University - South Africa), Marnus van Niekerk (Div. of Physiotherapy, Stellenbosch University - South Africa), Jeandri Olivier (Div. of Physiotherapy, Stellenbosch University - South Africa), Chris-Mari Lombaard (Div. of Physiotherapy, Stellenbosch University - South Africa), Nina McCarthy (Div. of Physiotherapy, Stellenbosch University - South Africa), Martin Heine (Institute of Sport and Exercise Medicine - South Africa), Susan Hanekom (Div. of Physiotherapy, Stellenbosch University - South Africa)

**Background** Prehospital care is integral in addressing sub-Saharan Africa's (SSA) high trauma burden. Consequently, robust, high-quality prehospital guidance documents are needed to inform care. These documents include, but are not limited to, clinical practice guidelines (CPGs), protocols and algorithms that are contextually appropriate for SSA. However, SSA prehospital guidance mostly originates from the "global north" with limited guidance for Africa by Africans. To strengthen prehospital clinical practice in SSA, we described and appraised all prehospital SSA guidance informing clinical decision making. **Methods** We conducted a scoping review of prehospital-relevant guidance, including CPGs, algorithms, protocols and position statements originating from SSA. We performed a comprehensive literature search and contacted key experts. Document screening and data extraction was done independently, in duplicate and reviewed by a third author. Guidance quality was determined using the AGREE II tool. Data was analysed using simple descriptive statistics in STATA 14. **Results** We included 51 guidance documents from 13 countries across SSA. Majority of guidance lacked an evidence foundation, made recommendations based on expert input, and were predominantly end-user presentations such as algorithms or protocols. Overall, reporting quality was poor, specifically for critical domains such as rigour of development; however, clarity of presentation was generally strong. Guidance topics focused on resuscitation and common diseases (both communicable and non-communicable) with major gaps identified across a variety of topics. **Conclusion** Majority of SSA prehospital guidance provides clinicians with excellent ready to use end-user material. Conversely, most lack appropriate evidence foundations and fail to transparently report the development process, highlighting the need to strengthen and build development capacity to promote the transition from eminence-based to evidence-based guidance for prehospital care in SSA. Guidance developers, professional societies and publishers need to be aware of international and local guidance development and reporting standards in order to produce guidance we can trust.

64<sup>th</sup>  
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**EMMA MCCRYSTAL**



**Snack foods displayed at retail checkout  
counters in Cape Town, South Africa**

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## NON-COMMUNICABLE DISEASES (5)

### SNACK FOODS DISPLAYED AT RETAIL CHECKOUT COUNTERS IN CAPE TOWN, SOUTH AFRICA

**Emma McCrystal** (Dietetics Student, Stellenbosch University - South Africa), **Renee Blaauw** (Human Nutrition, Stellenbosch University - South Africa)

Hospital-acquired infections (HAIs) are a common and dangerous threat to patient safety, with hand hygiene (HH) being a cheap and effective preventative measure. Despite detailed guidelines from the World Health Organisation (WHO), compliance with hand hygiene amongst healthcare workers is sub-optimal. Studies amongst medical students generally report deficiencies in their knowledge of HH. In this study, we assessed the knowledge and perceptions of Stellenbosch University (SU) medical students regarding hand hygiene, as well as their self-reported compliance in paediatric wards at Tygerberg Hospital. Data collection was through a 48-question electronic questionnaire emailed to 1142 MB,ChB students in their clinical years between November 2019-April 2020. Data were described using tables and graphs. 254 completed questionnaires (22.2%) were analysed. All respondents received formal training in HH. Overall mean knowledge of HH was 63.7%. All responders used alcohol-based handrub (ABHR) routinely for HH; only 37% knew that ABHR must be used for at least 20 seconds. 93.3% regarded HH to be a high/ very high patient safety issue. Mean self-reported compliance rates to HH was 81.3%. Although SU students are aware of the importance and receive undergraduate training in HH, overall knowledge can be improved with additional emphasis on the indications for HH and application of ABHRs. Direct observation of HH practices of medical students is recommended to reliably measure compliance rates. Additionally, regular feedback to students in the clinical environment may improve their HH compliance. Note: this study was terminated at the onset of the Covid-19 outbreak in South Africa.

# Perioperative Sciences (1)

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**INGE DU TOIT**



**Baseline characteristics and nutritional status of patients undergoing metabolic surgery as part of the OMIT (Obesity and Metabolic surgery Initiative Tygerberg Hospital)**

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## PERIOPERATIVE SCIENCES (1)

### BASELINE CHARACTERISTICS AND NUTRITIONAL STATUS OF PATIENTS UNDERGOING METABOLIC SURGERY AS PART OF THE OMIT (OBESITY AND METABOLIC SURGERY INITIATIVE TYGERBERG HOSPITAL)

**Inge Du Toit** (University of Stellenbosch - South Africa), **Prabash Sadhai** (University of Stellenbosch - South Africa), **Ankia Coetzee** (University of Stellenbosch - South Africa), **Jeanne Lubbe** (University of Stellenbosch - South Africa)

**Background:** HIV-positive patients are increasingly being affected by non-communicable diseases such as coronary artery disease (CAD). Data from high-income countries (HICs) indicate that HIV-positive patients have different risk-factor profiles and cardiac manifestations of acute coronary syndrome (ACS) compared to HIV-negative patients. There is limited data from Sub-Saharan Africa (SSA), and from South Africa with the biggest HIV epidemic in the world. The objective was to determine the 12-month period prevalence of HIV in patients with ACS and to compare the risk-factor profile, ACS presentation and management between HIV-positive and HIV-negative adults. **Methods:** The HIV-status of all patients hospitalised with ACS from 01 January to 31 December 2018 in Tygerberg Hospital (Cape Town, South Africa) was determined using routine clinical records. We performed multivariate conditional logistic regression on HIV-positive and HIV-negative patients (1:3 ratio) to compare the risk factor profile, ACS presentation and management. **Results:** Among 889 patients, 30 (3.4%) were HIV-positive (95% confidence interval (CI): 2.3 - 4.8). HIV-positive patients were younger, more frequently men, and had a lower prevalence of comorbidities and a family history of CAD. They presented more frequently with ST-elevation myocardial infarction (STEMI) [odds ratio (OR) (95% CI): 3.12 (1.2 - 8.4)] and single-vessel disease [OR (95% CI): 3.03 (1.2 - 8.0)]. Angiographic/echocardiographic data and management did not differ. Among HIV-positive patients, 17 (65%) were virally suppressed (HIV viral load < 200 copies/mL) with a median CD4+ count of 271 cells/mm<sup>3</sup>. Twenty (67%) HIV-positive patients were receiving antiretroviral therapy at the time of the ACS. **Conclusions:** We found an HIV-prevalence of 3.4% (95% CI 2.3 - 4.8) in adults with ACS in a high endemic HIV region. HIV-positive patients were younger and more likely to present with STEMI and single-vessel disease, but had fewer CAD risk factors, suggesting additional mechanisms for the development of ACS.

# **Violence, Injuries, Trauma & Rehabilitation (1)**

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**SHADÉ BREEDT**



**Geriatric trauma in an academic hospital in Cape Town, South Africa: Are we that different?**

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## VIOLENCE, INJURIES, TRAUMA & REHABILITATION (1)

### GERIATRIC TRAUMA IN AN ACADEMIC HOSPITAL IN CAPE TOWN, SOUTH AFRICA: ARE WE THAT DIFFERENT?

Danyca Shadé Breedt (Stellenbosch University - South Africa), Elmin Steyn (Stellenbosch University - South Africa)

**Background** The incidence of obesity is increasing worldwide including in HIV-positive patients. Antiretroviral pharmacokinetic data in obesity and the impact on immunovirological outcomes (CD4 count and viral load) are limited. **Objectives** To measure antiretroviral drug concentrations in obese and non-obese HIV-positive patients treated with efavirenz-tenofovir-emtricitabine. To determine pharmacokinetic differences across various indicators of abdominal obesity and to determine associations with immunovirological outcomes. **Methods** We conducted a retrospective cross-sectional secondary data analysis of two cohort studies. We measured mid-dose efavirenz, 8-hydroxy-efavirenz, tenofovir, and emtricitabine concentrations. We analysed antiretroviral concentrations according to obesity defined by published cut-offs by sex for waist circumference and waist-hip ratio. We compared immunovirological outcomes in the different groups. **Results** We included 213 participants: obesity was detected in 43/211 using BMI, 112/209 using waist circumference, and 106/170 using waist-hip ratio. The concentration of all the antiretrovirals were lower in the participants with BMI  $\geq 30$  kg/m<sup>2</sup>, but was most striking for efavirenz (medians: 1752.3 ng/ml vs 2342.9 ng/ml, P=0.002). Using waist circumference, efavirenz (medians: 1845.8 ng/ml vs 2571.2 ng/ml, P<0.001), tenofovir (medians of 64.5 ng/ml vs 72.8 ng/ml, P=0.025), and emtricitabine (medians: 156.5 ng/ml vs 220.9 ng/ml, P=0.002) concentrations were lower in the obese population. However, 8-hydroxy-efavirenz concentrations were similar in the non-obese and obese participants. Using waist-hip ratio, the concentration of all the antiretrovirals were lower in the obese population, but was most striking for emtricitabine (medians: 173.6 ng/ml vs 225.3 ng/ml, P=0.025). There were no immunovirological differences across the categories. **Conclusion** We found lower antiretroviral concentrations in participants with obesity determined by BMI, waist circumference, and waist-hip ratio groups; the differences were most striking in participants with obesity determined by increased waist circumference. The clinical relevance of lower concentrations is not clear as there was no associated difference in immunovirological outcomes.