

# 62<sup>nd</sup> Annual Academic Day 29 August 2018

## FMHS Annual Academic Day 2018: Undergraduate student presentations

**SEAN ANDERSON**



The neurocognitive phenotype of patients with left hemispheric neurodegenerative disorder (HMD) on active verbal therapy



**EMILIE JOHANNESSEN, GEMMA BULLOCK, BILLY WARD, LORRAINE TROMPER, LUCY MURPHY, AND COLLEEN O'NEILL**



Effect of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**ZUMMIE BEGLAM**



Assessment of comorbidity conditions in low-income patients with the updated Charlson Comorbidity Index



**HEMMA BULLOCK, BILLY WARD, LORRAINE TROMPER, LUCY MURPHY, AND COLLEEN O'NEILL**



Effect of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**LEZEL DIALANE & MAGDA DE VRIES**



The functional status assessment of elderly patients in Tygerberg and Groote Schuur Hospital



**RYAN BOON, MEGAN DRESE, KYLEE BLOOM, & JORDAN DE VRIES**



Effect of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**MARSHINE ORETTENBACH & ANJIELO TSOUSA**



Mobility transition in older adults using an accelerometer



**WILMA KOTZEE, LARISA GOLDENHUIS, & ELLEN DE VRIES**



The effectiveness of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**KATHLEEN DE VRIES**



Mutational analysis of the human genome by clinicians and academics at the University of Tygerberg Hospital



**ANON VUURLOO**



Anticancer therapeutic drug monitoring in children at Tygerberg Hospital 2011-2017



**CHERIE PRINCE, THOMAS DE VRIES, JARRETT DAVIS, ROBIN DUNN, LARA PATRICK, DANIELLE PRINCE, & JACQUELINE PRINCE**



The effectiveness of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**SAMANTHA GAY, ELLEN DE VRIES, & LARA PATRICK**



The effectiveness of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**IVAN DE VRIES & DOMINIQUE DE VRIES**



The effectiveness of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**SHARON PRINCE, JARRETT DAVIS, LARA PATRICK, DANIELLE PRINCE, & JACQUELINE PRINCE**



The effectiveness of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**CHRISTIAN KOTZEE**



The effectiveness of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



**DANIELLE PRINCE**



The effectiveness of a 12-week low-carbohydrate diet on body composition and metabolic health in healthy young adults



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

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**KARLA LÜTZELER**



**Determining the adequacy of nutrition  
support in a tertiary hospital**

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## HEALTH SYSTEMS STRENGTHENING (1)

### DETERMINING ADEQUACY OF NUTRITION SUPPORT IN TYGERBERG HOSPITAL

Janicke Visser (Stellenbosch University), Karla Lutzeler (Stellenbosch University), Renee Blaauw (Stellenbosch University)

Inadequate nutrition support (NS) practices are regarded as one of the main contributing factors to the high prevalence of hospital malnutrition. This study aimed to evaluate how enteral nutrition (EN) and oral nutrition supplement (ONS) prescriptions compared to delivery and to identify factors affecting this process. The latter included patient perceptions and knowledge and attitudes of nursing staff regarding NS. Patients receiving NS during February-March 2018 in Tygerberg Hospital were prospectively assessed over a maximum of 14 days. Nursing staff completed a self-administered questionnaire. A percentage difference between prescribed and received NS of between 90-110% was regarded as optimal NS. Acceptable knowledge was set at 80% a priori. Of the 143 patients receiving EN, the majority did not meet optimal NS targets: 64.1% for energy and 62.8% for protein. Significant differences regarding NS handling were noted between wards ( $p=0.02$ ), diagnostic categories ( $p=0.04$ ) and genders ( $p=0.04$ ). Sixty-two patients received ONS (average 400ml/day; median 5 days). Many patients did not know the purpose of the ONS prescribed (49%), nor the prescribed volume that they needed to consume (42%). On average, 52% of the prescribed product was received and 57% of the received product was consumed. A significant correlation was found between advancing age and percentage product consumed ( $r=0.27$ ,  $p=0.03$ ). Only three nurses (1.5%) obtained >80% knowledge score, with an average score of  $51.8 \pm 12.8\%$ . Improved knowledge was associated with a higher qualification ( $p=0.01$ ) and longer working experience ( $p<0.01$ ). Although 59% of nurses indicated no prior formal training on NS, 86% indicated that they would like to receive further information. Just over 60% of EN patients did not receive adequate NS and about a half of ONS patients received and consumed their ONS according to prescription. Knowledge of nursing staff on practical aspects of NS needs to be improved as a matter of urgency.



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LIZAAN JOHANNES, TINÉ KITSHOFF, CARLA MARITZ,  
COURTNEY-JADE NEL, PETRO ROSSOUW, CHANÉ NERÍ  
VAN STRAATEN



**The Effectiveness of Physiotherapy versus Standard Medical  
Care on Pain, Functional Disability, Kinesiophobia and Pain  
Catastrophisation in Adult Patients with Non-Specific Acute  
Low Back Pain: A Systematic Review and Meta-analysis**

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## HEALTH SYSTEMS STRENGTHENING (2)

### EFFECTIVENESS OF PHYSIOTHERAPY VERSUS STANDARD MEDICAL CARE ON PAIN, DISABILITY, KINESIOPHOBIA AND PAIN CATASTROPHIZATION IN ADULT PATIENTS WITH NON-SPECIFIC ACUTE LOW BACK PAIN: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Carla Maritz (Stellenbosch University), Chane' van Straaten (Stellenbosch University), Courtney-Jade Nel\* (Stellenbosch University), Linzette Morris (supervisor) (Stellenbosch University), Lizaan Johannes (Stellenbosch University), Petro Rossouw (Stellenbosch University), Tine' Kitshoff (Stellenbosch University)**

**Objective:** The objective of this systematic review is to identify and evaluate the best available evidence for improving pain, disability, fear-avoidance behaviour and pain catastrophization in individuals experiencing non-specific acute LBP. **Methods and Analysis:** A comprehensive search strategy was conducted within the following seven databases: Cochrane Library, EBSCO Cinahl, EBSCO SportDiscus, PEDro, Pubmed, Science Direct and Scopus. No date limit was applied. The PEDro score was used for methodological appraisal and the National Health and Medical Research Council (NHMRC) Evidence Hierarchy for determining the strength of the evidence. Three reviewer pairs evaluated the relevant articles according to the inclusion criteria and extract relevant data. Ethics approval was not required due to the nature of the study design. **Results:** A total of nine articles were included. Total sample size consisted of 993 participants, 508 in the physiotherapy group and 486 in the standard medical care group. The mean age in the studies ranged from 33.3 to 41.4 years. Both male and female participants were included. The study reported on the effect of physiotherapy to standard medical care. In the short term period the meta-analysis showed that physiotherapy was significantly more effective in reducing pain than standard medical care [95% CI, -0.90 to -0.12,  $p=0.01$ ]. When measuring disability, the meta-analysis found no significant difference but did favour physiotherapy at all time-intervals. For the other two outcomes, no significant findings were found. **Conclusion:** The results obtained in this review found no significant difference between physiotherapy versus standard medical care. However, in general physiotherapy was favoured in the outcomes measured. It is therefore recommended, that within the short-term period, patients should seek physiotherapy treatment opposed to standard medical care, in order to prevent chronicity and therefore prevent the need for mid to long term intervention.

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**ANDREA BOON, MEGAN CARELSE, LIZE ELOFF,  
MICHAELA STEWART, ZANI NAUDE, MINAL ZADIE**



**Factors associated with non-attendance of  
scheduled occupational and physiotherapy  
outpatient follow-up appointments at the Western  
Cape Rehabilitation Centre (WCRC)**

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## **HEALTH SYSTEMS STRENGTHENING (3)**

### **FACTORS ASSOCIATED WITH NON-ATTENDANCE OF SCHEDULED OCCUPATIONAL AND PHYSIOTHERAPY OUTPATIENT FOLLOW-UP APPOINTMENTS AT THE WESTERN CAPE REHABILITATION CENTRE (WCRC)**

**Andrea Boon (Stellenbosch University), Lize Eloff (Stellenbosch University), Megan Carelse (Stellenbosch University), Michaela Stewart (Stellenbosch University), Minal Zaidi (Stellenbosch University), Zani Naude Stellenbosch University)**

Introduction: Occupational therapists and physiotherapists use follow-up appointments, to continue and monitor the effectiveness and outcome of therapy intervention. Patients with physical impairments are assisted by therapists to prevent and manage secondary complications and to maintain their functionality. Attendance of follow-up appointments are essential in the treatment process, as non-attendance has negative implications for both the patient and healthcare facility. Objectives: The objectives of this research were to 1) provide a description of the characteristic factors of attending and non-attending patients with scheduled occupational therapy and physiotherapy appointments at outpatient clinics at the Western Cape Rehabilitation Centre and 2) to determine the association between non-attendance and identified covariates. Methodology: A retrospective, cross-sectional study of all outpatients with a scheduled appointment between January 2017 and December 2017 at Western Cape Rehabilitation Centre was conducted in which a period census was used to sample patients (n =837). Descriptive statistics was used to report the research results and additionally, logistic regression was employed to determine the adjusted odds ratio for the association between non-attendances and identified characteristic factors. Ethical clearance was obtained from the Undergraduate Research Ethics committee at Stellenbosch University prior to data collection. Results and conclusion: The current study provides useful insights into the factors associated with non-attendance of outpatients to scheduled occupational therapy and physiotherapy appointments at the Western Cape Rehabilitation Centre and contributes to limited research on the topic in a South African context. Factors that had a significant association with non-attendance included hospital classification, diagnostic category and impairment according to ICD 10 coding. Further studies are needed to determine the reasons for non-attendance at institutions such as Western Cape Rehabilitation Centre which will assist the institutions in implementing solutions to reduce high rates of non-attendance.



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**René Potgieter**



**Understanding community mobility in older adults  
within the Cape Town Metropole using an  
occupational lens**

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## **HEALTH SYSTEMS STRENGTHENING (4)**

### **UNDERSTANDING COMMUNITY MOBILITY IN OLDER ADULTS WITHIN THE CAPE TOWN METROPOLE USING AN OCCUPATIONAL LENS**

**Courtney Hickson (Stellenbosch University), Ermen Venter (Stellenbosch University), Rene Potgieter (Stellenbosch University), Samantha Sephton (Stellenbosch University), Talita Stapelberg (Stellenbosch University)**

Background: Aging world populations cast a spotlight on older adults' occupational participation. To encourage occupational participation in older adults, occupational therapists need to have a clear understanding of the ways older adults access out-of-home occupations. Purpose: This research project aims to identify and establish the meaning of out-of-home occupations of older adults in the Cape Town Metropole, the ways in which these occupations are accessed and the correlation of community mobility with self-reported health. Methods: Face-to-face interviews were conducted using a structured interview form in a cross-sectional research design with a convenience sample of a population of 40 older adults in the Cape Town Metropole. The sample included urban, healthy, independent living, upper-middle income individuals 65 years and older without known physical or cognitive impairments, residing in Oasis Retirement Resort. Results: The demographic make-up of the sample (N=40) consisted of majority of participants being English speaking (n=37), female (n=27) and widowed (n=23). Most of the participants (n=32) were active drivers, and self-driving was the mode of community mobility most frequently used. The second most used mode of community mobility was being a car passenger (n=38). Walking as a mode of community mobility was used by the majority of participants (n=33). The out-of-home places which signified the most meaning for the majority of the sample were the community garden, restaurant, coffee shop or bar, friends and family members' houses, the doctor and dentist's office, the hairdresser, salon or barbershop and the pharmacy. Conclusion: As occupational beings, older adults benefit from, and have an occupational right to access their valued occupations. Occupational therapists facilitate participation in these occupations; one way in which this may be achieved, is by ensuring suitable community mobility options.

## **Infectious Diseases: ORAL (1)**

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**ANTON ENGELBRECHT**



**Antiretroviral therapeutic drug monitoring in  
children at Tygerberg Hospital 2012-2017**

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## **INFECTIOUS DISEASES (1)**

### **ANTIRETROVIRAL THERAPEUTIC DRUG MONITORING IN CHILDREN AT TYGERBERG HOSPITAL\_ 2012-2017**

**Anton Engelbrecht (MBChB VI, Faculty of Medicine and Health Sciences, Stellenbosch University), Eric Decloedt (Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch Unive), Helena Rabie (Department of Paediatric and Child Health, Faculty of Medicine and Health Sciences, Stellenbosch University), Jennifer Norman (Division of Clinical Pharmacology, Department of Medicine, Health Sciences Faculty, University of Cape Town), Lubbe Wiesner (Division of Clinical Pharmacology, Department of Medicine, Health Sciences Faculty, University of Cape Town)**

Background: In South Africa therapeutic drug monitoring (TDM) is not routinely used in the management of HIV, but may be useful in evaluating causes of treatment failure, guiding dosing and predicting efficacy of antiretrovirals. There are differences in pharmacokinetics between children and adults which may be further complicated by concomitant disease. Children at Tygerberg Hospital (TBH) can access TDM through the Clinical Pharmacology service at Groote Schuur Hospital. We reviewed the indications for TDM at TBH from 1 January 2012 to 30 June 2017 .Methods: Children < 18 years of age that had a therapeutic level were identified from the results database. Clinical data was collected to identify the TDM indications. Data was captured in Access and results analysed with Stata. Results: Eighty six levels were done in 79 patients. In 80% (63/79) of patients lopinavir levels were requested, 18% (14/79) efavirenz and 2% (2/79) nevirapine, The median age of children on efavirenz was 84 months and those on lopinavir 12 months. In our preliminary results lopinavir was mostly requested in patients with virological failure, when adherence measures did not correlate with the clinical picture and for therapeutic dose monitoring in neonates. Efavirenz levels were requested when toxicity was suspected and nevirapine in patients receiving concomitant rifampicin. Lopinavir TDM confirmed non-adherence in 50% (8/16) of patients with virological failure or when adherence measures did not correlate with the clinical picture. Efavirenz TDM confirmed toxicity in 88% (7/8) of patients. Conclusion: Based on our preliminary results, we found that TDM is mostly requested in children with virological failure and when adherence measures did not correlate with the clinical picture or when toxicity was suspected. Lopinavir TDM confirmed non-adherence in only 50% of patients while efavirenz TDM confirmed toxicity in 88% of patients.



## **Maternal & Child Health: ORALS (2)**

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AMY STRYDOM



Case Study: Prenatal Screening,  
Management Options and Ethical  
Considerations in a Twin Pregnancy  
Discordant for Down Syndrome

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## **MATERNAL & CHILD HEALTH (1)**

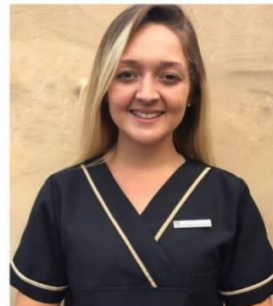
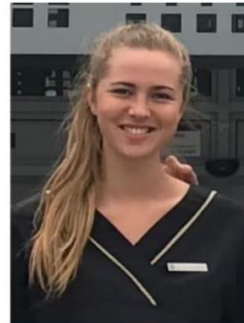
### **CASE STUDY: PRENATAL SCREENING, MANAGEMENT OPTIONS AND ETHICAL CONSIDERATIONS IN A TWIN PREGNANCY DISCORDANT FOR DOWN SYNDROME**

**Amy Strydom (Stellenbosch University)**

A woman pregnant with twins was presented with several management options after a 2nd trimester antenatal ultrasound scan revealed that these twins were likely to be discordant for Down syndrome. The management options offered included continued pregnancy, selective termination of the affected twin and non-selective termination of the entire pregnancy. Each management option had various ethical implications with conflicting maternal and fetal interests as a prominent theme. When considering the Choice on Termination of Pregnancy Act of 1996, as well as Tygerberg policy, these issues become even more complex. The mother chose to non-selectively terminate the pregnancy. At first glance, this option seemed ethically unjustifiable, but when considering the mother's disposition towards raising a child with disability, as well as the risks of complications to the unaffected twin should selective termination have been opted for, it became clear that this option was ethically justifiable. This case study and ethical discussion highlights the need for further discussion regarding current termination of pregnancy laws in South Africa and unusual scenarios such as the one presented in this case study.

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**SAMANTHA GAY, ELANI MATTHEE  
JULIA MILLER, ELANIE VAN SCHALKYK**



**The perceptions of mothers with preterm infants  
regarding early communication development:  
A scoping review of the research field**

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## **MATERNAL & CHILD HEALTH (2)**

### **A SCOPING REVIEW ON THE PERCEPTIONS OF MOTHERS WITH PRETERM INFANTS REGARDING EARLY COMMUNICATION DEVELOPMENT**

**Elani Matthee (Stellenbosch University), Elanie van Schalkwyk (Stellenbosch University), Julia Miller (Stellenbosch University), Samantha Gay (Stellenbosch University)**

Preterm infants are at risk for communication disorders/delays. In order to prevent or effectively address these possible communication disorders/delays, health professionals need to understand the perceptions and needs of mothers regarding the early communication development of their preterm infant. Although previous studies have focused on parents' and patients' perceptions of medical information received from health professionals, there is limited research regarding maternal perceptions of early communication development, specifically in the South African context, focusing on preterm infants. The aim of this study was to scope and summarize the range and nature of available research in the fields of early communication development and intervention in preterm infants, and specifically maternal perceptions thereof. This study followed the methodology of a scoping review. The scoping review followed five phases, namely: articulating the research question, identifying relevant studies, selecting appropriate studies, charting the data and collating, summarizing and reporting the results. Research articles were included only if they addressed the key concepts of our research question. Based on the results of this study, a need exists for further research within the field of early communication development and intervention in the preterm population. It is recommended that an empirical study aiming to establish the most effective strategies for communication-interaction training with mothers of preterm infants is conducted. A further recommendation would be to increase the awareness of early communication development and intervention in the preterm population amongst both health professionals and parents.



## **Maternal & Child Health: POSTERS (2)**

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**STIAN NIEUWOUDT**



**Determination of the factors influencing the  
timing of stroke in childhood tuberculous  
meningitis**

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## **MATERNAL & CHILD HEALTH (3)**

### **THE FACTORS INFLUENCING THE TIMING OF STROKE IN CHILDHOOD TUBERCULOUS MENINGITIS**

**Regan Solomons (Stellenbosch University), Sarel Tielman Nieuwoudt (Stellenbosch University)**

Background: Cerebrovascular complications are commonly observed in tuberculous meningitis and are its most menacing complication. Sequelae of stroke include an array of neurological deficits, from focal weakness to seizures, and may also result in death. Research Questions, Hypothesis and Objectives: We postulated that there are clinical factors associated with timing of stroke in childhood TBM. Our hypothesis was that these clinical factors would allow prediction of stroke in childhood TBM. Our objective was to determine clinical factors which can allow us to better understand and improve management of stroke in childhood TBM. Methods: This was a retrospective, analytical cohort study based at Tygerberg Hospital, Cape Town, South Africa. The study population included 354 children between the ages of 3 months and 13 years who were diagnosed with and treated for TBM at Tygerberg Hospital between 1985 and 2015. Results: Patients who have had TBM for 10 days or more before treatment initiation were less likely to acquire a stroke (RR 0.37) showing a 63% protective effect of longer duration of illness (CI 95% [0.17, 0.82]. The p-value is <0.05 and if the chance threshold is set at 5%, this means that there is only 1% chance this finding happened by chance. Patients under the age of 2 years were also at an increased risk of acquiring stroke (RR 1.34) with a 34% increased risk (CI 95% [1.01, 1.78]). Presence of HIV co-infection, malnutrition and a more advanced TB stage show no added risk of stroke complicating TBM. Conclusion: A lower age (<2 years) appears to be a definite risk factor for stroke complicating TBM. Delaying treatment initiation by 10 days after TBM manifests protects patients from stroke complicating their TBM.

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**NERINDA BEZUIDENHOUT, JERRY HARCK,  
CELESTE LUCAS AND ANMARI SMITH**



**SOUTH AFRICAN SPEECH-LANGUAGE THERAPISTS'  
ASSESSMENT AND INTERVENTION PRACTICES WITH  
MULTILINGUAL CHILDREN**

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## **MATERNAL & CHILD HEALTH (4)**

### **SOUTH AFRICAN SPEECH-LANGUAGE THERAPISTS' ASSESSMENT AND INTERVENTION PRACTICES WITH MULTILINGUAL CHILDREN**

**Anmari Smith (Stellenbosch University), Celeste Lucas (Stellenbosch University), Jerry Harck (Stellenbosch University), Nerinda Bezuidenhout (Stellenbosch University)**

Background: In a diverse multilingual and multicultural South Africa, the linguistic profile of South African Speech-Language Therapists (SLTs) are not representative of the country's linguistic and cultural diversity, as the vast majority is only proficient in English and Afrikaans. Objectives: The study aimed to investigate South African SLTs' perspectives and experiences of multilingualism, including their assessment and intervention practices with children from multilingual backgrounds, and adaptations implemented with children who speak languages that the SLTs are not proficient in. Method: A questionnaire was completed by 28 South African SLTs, who work or have worked with multilingual children. A descriptive mixed methods design was followed. Results: Most participants indicated to be only proficient in both English and Afrikaans. In comparison, their caseloads consisted of children who mainly spoke a variety of other African languages. Findings showed that the SLTs mostly conducted assessment and intervention in English only using informal and dynamic assessment methods. Majority of the SLTs noted that they conducted entire assessments by themselves and half of the participants sought additional information about the children's cultural backgrounds. The greater number of participants considered the child and family members as clients during intervention. However, most participants felt that they did not have sufficient resources in order to provide the best services to children from multilingual backgrounds. Conclusion: The mismatch between languages spoken by the SLTs and children on their caseload highlights the need for a diverse group of SLTs, who are adequately trained to work with the multilingual population.



## **Mental Health & Neurosciences: ORALS (3)**

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**KATHLEEN EVA CROMBIE**



**Medical students' Experiences of Mistreatment by  
Clinicians and Academics at Stellenbosch  
University and Tygerberg Hospital, South Africa**

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## **MENTAL HEALTH & NEUROSCIENCES (1)**

### **MEDICAL STUDENTS' EXPERIENCES OF MISTREATMENT BY CLINICIANS AND ACADEMICS AT STELLENBOSCH UNIVERSITY AND TYGERBERG HOSPITAL, SOUTH AFRICA**

**Dr Kenneth David Crombie (UCT), Dr Maria Christodoulou (SUN), Kathleen Eva Crombie (SUN), Prof Soraya Seedat (SUN)**

Although a number of international studies on mistreatment of medical students have been published, to date no South African studies have been done on the topic. **OBJECTIVES:** To identify experiences of mistreatment of medical students by their superiors (clinicians and academics) at Stellenbosch University and Tygerberg Hospital and to describe the demographic characteristics, mistreatment, mental health correlates and knowledge of current reporting systems. **METHODS:** This cross-sectional descriptive study was conducted through a questionnaire survey of second to sixth year medical students at Stellenbosch University. All enrolled medical students in second to sixth year were included in this study. Participation was voluntary and anonymous and the survey was completed online (using SurveyMonkey). Three email invitations were sent out, each one week apart with participants required to provide online consent. **RESULTS:** 78.2% of students reported having been mistreated which occurred mostly in the departments of Internal Medicine and Surgery. Being ignored/excluded (61.8%) was the most prevalent form of mistreatment, followed by gestures e.g., eye rolling, scoffing, glaring (52.4%), verbal abuse (43.1 %), racial discrimination (24.5%) and gender discrimination (21.3%). Students felt that registrars were the main perpetrators (57.5%). 25.5% of students met criteria for a mood/anxiety disorder and 66.9% of these students felt that mistreatment by senior doctors contributed to their psychological distress to some degree. 80.9% of students were not aware of a system in place to report mistreatment.

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**SEAN ANDERSON**



**The neurological phenotype of patients with HIV  
associated neurocognitive disorder (HAND) on  
antiretroviral therapy**

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## MENTAL HEALTH & NEUROSCIENCES (2)

### THE NEUROLOGICAL PHENOTYPE OF PATIENTS WITH HIV ASSOCIATED NEUROCOGNITIVE DISORDER (HAND) ON ANTIRETROVIRAL THERAPY

Eric H. Decloedt (Division of Clinical Pharmacology, Department of Medicine, Faculty of Medicine and Health Sciences, University of Stellenbosch), John A. Joska (Division of Neuropsychiatry, Department of Psychiatry and Mental Health, Faculty of Health Sciences, University of Cape Town), Michael McCaul (Biostatistics Unit, Centre for Evidence-based Health care Department of Global Health, Faculty of Medicine and Health Sciences, University of Cape Town), Ned C. Sacktor (Johns Hopkins University, Johns Hopkins Bayview Medical Center, Baltimore, Maryland, USA), Sean Glen Anderson (Faculty of Medicine and Health Sciences, University of Stellenbosch, Cape Town, South Africa)

**Background:** All forms of HIV associated neurocognitive disorder (HAND) remain highly prevalent despite effective antiretroviral therapy (ART). Neurological findings have been well described in regions where clade B HIV subtype dominates but not in South Africa where clade C predominates. The primary endpoint was to describe neurological manifestations in patients with HAND in the era of ART and to explore associations with Global Deficit Score (GDS). The secondary endpoint was to determine associations between efavirenz (EFV) and its metabolite (8-hydroxy efavirenz [OH-8-EFV]) with neurological manifestations.

**Methods:** We conducted cross sectional analyses of the neurological examination findings of patients screened and/or enrolled in a HAND randomised controlled trial. Neurological examination data was grouped into clusters made up of clinically related neurological signs. Multiple linear regression models were used to explore associations between neurological parameters and GDS, as well as plasma and cerebrospinal EFV and OH-8-EFV concentrations.

**Results:** We included 80 participants. 90% were female with a median age of 35 and a median GDS of 0.94 (interquartile-range (IQR) 0.63-1.36). The patients were established on ART for a median of 40 months and at entry had a median CD4+ T-cell count of 498 cell/mm<sup>3</sup>. We found statistically significant associations between HAND severity and neurological clusters: gait [slow walking speed ( $p=.03$ ;  $R^2=.06$ ), gait ataxia ( $p<.01$ ;  $R^2=.21$ ), abnormal gait appearance ( $p<.01$ ;  $R^2=.18$ )]; coordination [upper limb bradykinesia ( $p<.01$ ;  $R^2=.10$ ) and lower limb bradykinesia ( $p=.01$ ;  $R^2=.10$ )]; primitive reflexes [jaw jerk ( $p=.04$ ;  $R^2=.05$ ) and palmo-mental response ( $p=.03$ ;  $R^2=.06$ )]; smooth pursuit ( $p=.01$ ;  $R^2=.09$ ) and saccades ( $p<.01$ ;  $R^2=.15$ ). No significant associations were found between plasma and cerebrospinal EFV or OH-8-EFV concentrations and any neurological sign.

**Conclusion:** We found the neurological sign clusters of gait, coordination, primitive reflexes, smooth pursuits and saccades were associated with GDS and could be used in clinical practice to assess for HAND severity.



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**JILLIAN PETERSEN, CHANELLE STEWART,  
PRELENE KANNEMEYER, STACEY BRUMMER**



**Reliability and validity of the Stuttering  
Severity Instrument (SSI): A scoping review.**

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## **MENTAL HEALTH & NEUROSCIENCES (3)**

### **RELIABILITY AND VALIDITY OF THE STUTTERING SEVERITY INSTRUMENT (SSI): A SCOPING REVIEW**

**Chanelle Stewart (Stellenbosch University), Jillian Petersen (Stellenbosch University), Prelene Kannemeyer (Stellenbosch University), Stacey Brummer (Stellenbosch University)**

Background: The Stuttering Severity Instrument-3 was designed to be utilised in clinical settings and research where either a single, numerical score or a descriptive label is desired. Limitations and inconsistencies have been identified which impact the credibility of the studies, all of which involve qualified speech therapists conducting the Stuttering Severity Instrument-3. These inconsistencies reflect on the use of the instrument in the clinical setting and the positive and negative factors influencing the reliability and validity of the Stuttering Severity Instrument-3. Aim: Focus was on identifying factors that influence the reliability and validity thereof. Method: For this investigation, the inclusion criteria includes literature published in English, dates ranging from 1971 to 2018, all age groups of individuals who stutter and research reviews that occur in developed and developing countries. Arksey and O'Malley methodology for conducting a scoping review was utilised by searching several databases. Results: The subjectivity of the instrument presents a significant influence of the clinician's judgement and perception of various aspects of stuttering behaviours. It introduces a variability among clinicians in the interpretation of results thus reducing its accuracy and making it unreliable. It is incapable of measuring stuttering behaviours that are specific in differentiating between the stuttering severity, the presence of normal dysfluency and interiorized stuttering in preliterate children which reduces the validity of the tool. Conclusion: The validity of the Stuttering Severity Instrument-3 as a diagnostic assessment tool has been influenced by the reliability. The Stuttering Severity Instrument-3 is unreliable and has reduced validity as an assessment tool due to variability. Keywords: Stuttering Severity Instrument-3, reliability and validity, variability, unreliable, reduced validity.

## **Mental Health & Neurosciences: POSTERS (1)**

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CARISSA VAN AARDE



Sleep Disturbances, Trauma Load and Perceived Stress:  
Predictors of PTSD Symptom Severity In A Sample Of Trauma  
Exposed Adolescents

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## **MENTAL HEALTH & NEUROSCIENCES (1)**

### **PTSD SYMPTOM SEVERITY, TRAUMA LOAD AND SLEEPING DIFFICULTIES IN TRAUMA EXPOSED, TREATMENT SEEKING ADOLESCENTS**

**Carissa van Aarde (Stellenbosch University), Jani Nothling (Stellenbosch University), Soraya Seedat (Stellenbosch University)**

**BACKGROUND:** Sleep disturbances are associated with various anxiety and trauma related disorders and specifically with post-traumatic stress disorder (PTSD). Two of the core symptoms of PTSD are recurrent distressing dreams about the traumatic event and difficulty falling or staying asleep (insomnia). Sleep is essential for functioning with poor sleep compromising cognitive, emotional and behaviour regulation. Sleep is also of particular importance for brain development and information processing in children and adolescents. The aim of this study was to determine if PTSD symptom severity and trauma load is associated with nightmares and insomnia in a sample of trauma exposed, treatment seeking adolescents. **METHODS:** Three hundred thirty-eight South African adolescents, between 12 and 18 years of age, exposed to at least one DSM-5 qualifying traumatic event, were assessed for PTSD related sleep difficulties using the Kiddie Schedule for Affective Disorders and Schizophrenia (KSADS). Childhood exposure to ten common trauma types was also recorded using the KSADS trauma checklist. PTSD symptom severity was measured using the Child PTSD Checklist (CPC). **RESULTS:** Gender ( $B=.040$ ,  $p=.465$ ), age ( $B=.15$ ,  $p=.072$ ) and grade ( $B=-.11$ ,  $p=.182$ ) were not significant demographic predictors in a regression model predicting PTSD symptom severity. Nightmares ( $B=.14$ ,  $p=.026$ ) and insomnia ( $B=.25$ ,  $p<.000$ ) were significant predictors of PTSD symptom severity. Trauma load ( $B=.14$ ,  $p=.14$ ) and perceived stress ( $B=.51$ ,  $p<.000$ ) were significant moderators of PTSD. The regression model explained 63.1% of the variance predicting PTSD symptom severity. **CONCLUSION:** Assessing and treating sleep difficulties related to PTSD in trauma exposed adolescents, in an effort to reduce the developmental impact of trauma on brain development and general functioning, should not be overlooked. Longitudinal studies may contribute to a better understanding of the long-term effects of trauma related insomnia and nightmares on mental and physical health outcomes.

## **Noncommunicable Diseases: ORALS (3)**



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**IMAN GIERDIEN AND DOMINIQUE GREEFF**



**Regulations relating to the reduction of sodium in certain  
foodstuffs and related matters:  
Perspectives from consumers in the  
Tygerberg health district, Western Cape, South Africa**

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## **NONCOMMUNICABLE DISEASES (1)**

### **REGULATIONS RELATING TO THE REDUCTION OF SODIUM IN CERTAIN FOODSTUFFS AND RELATED MATTERS: PERSPECTIVES FROM ADULT CONSUMERS IN THE TYGERBERG HEALTH DISTRICT, CITY OF CAPE TOWN, WESTERN CAPE, SOUTH AFRICA**

**Dominique Greeff (Stellenbosch University), Hanneke Schreuder (Stellenbosch University), Iman Gierdien (Stellenbosch University), Lebogang Mohlala (Stellenbosch University), Liezel Engelbrecht (Stellenbosch University), Lindsay Reid (Stellenbosch University), Maritha Marais (Stellenbosch University), Marizaan du Toit (Stellenbosch University), Megan Yates (Stellenbosch University), Nelene Koen (Stellenbosch University), Tessa Leng (Stellenbosch University), Yolande Smit (Stellenbosch University)**

In South Africa, the prevalence of adult hypertension (HT), a condition linked to stroke and cardiovascular disease, has increased at an alarming rate in recent years. Salt reduction legislation is a cost effective way to reduce this burden, as salt is a driver of HT. This study aimed to determine City of Cape Town (CoCT) consumers' awareness, attitudes and practices relating to the current salt legislation and whether the legislation has influenced their consumption patterns. In this cross-sectional, descriptive study with an analytical component, an interviewer-administered survey was conducted on literate adult consumers (N=583) at four randomly selected shopping malls in the Tygerberg health district, CoCT. More than half (n=332; 56.9%) of all participants indicated they try to consume less salt and of those, 67.2% (n=223) said they do so because they think it is healthier. Processed foods were identified by 50.4% (n=294) of participants as a major source of salt in their diet. Twenty two percent (n=128) of participants indicated that they suffer, or have suffered from (HT), while significantly more HT sufferers chose lower salt containing products compared to those with no HT ( $p=0.008$ ). Only 16.5% (n=96) of participants were aware of the current salt legislation. Though 47.9% of participants think that the legislation will affect the taste of food negatively, 80.9% reported they have not noticed a change after the first phase of the legislation had been implemented. The majority of participants were positive about the role of manufacturers to lower the amount of salt in foods. Though many consumers try to consume less salt because they think it is healthier, they still consume processed foods regularly. In general, consumers do not have a negative attitude towards the salt legislation, suggesting it is a low-barrier intervention to decrease the populations' salt consumption.

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LIEZEL BLAAUW & MAGDA DE MOOIJ



The Nutritional Status Assessment of  
Dialysis Patients in Tygerberg and Groote  
Schoor Hospital

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## **NONCOMMUNICABLE DISEASES (2)**

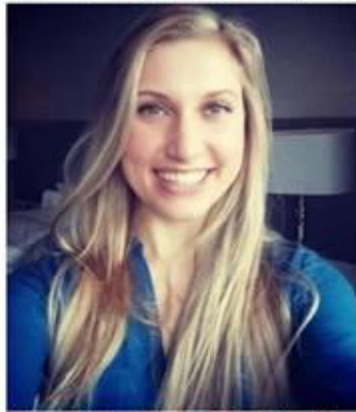
### **THE NUTRITIONAL STATUS ASSESSMENT OF DIALYSIS PATIENTS IN TYGERBERG AND GROOTE SCHUUR HOSPITAL**

**Gareth Coetzee (University of Stellenbosch), Liezel Blaauw (University of Stellenbosch), Magda de Mooij (University of Stellenbosch), Megan Donald (University of Stellenbosch), Nazeema Esau (Tygerberg Hospital), Zarina Ebrahim (University of Stellenbosch)**

**Introduction:** Chronic Kidney Disease (CKD) has many nutritional complications in dialysis patients. Research has shown malnutrition to be as high as 20-75%. However, recent studies show increasing trends in obesity. Therefore, this study aimed to assess the current nutritional status of dialysis patients using methods sensitive to under and over nutrition. **Methods:** A cross-sectional descriptive study was performed at Tygerberg and Groote Schuur Hospital dialysis units. Anthropometrical measurements include weight, height, BMI, waist circumference, triceps, mid-arm circumference and arm muscle area (AMA). RAPA 1 and RAPA 2 scores assessed physical activity levels. Biochemical measures included haematology, renal function and nutrition outcomes. Dietary intake assessment included 24-hour recalls. Statistica 13.3 was used to perform statistical analysis. **Results:** There were 102 patients who participated, 71% (n=72) hemodialysis patients and 29% (n=30) peritoneal dialysis patients. The age of the patients were  $40.6 \pm 10.61$ , 42% were males (n=43) and 58% females (n=59). Patients were mostly unemployed with a household income less than R3000 per month. The BMI showed patients were mainly overweight 34% (n=35) and obese 19% (n=20). The AMA was low in the normal weight group. Biochemical results show mostly normal values, except for a high phosphate level. The RAPA scores showed that 77% (n=79) of patients did none to light aerobic activity and 80% (n=82) did no strength training exercises. Dietary intake showed suboptimal intake. High food costs as barriers to following dietary advice were identified in 76% (n=68) of patients. **Conclusion:** Overweight, obesity and low muscle mass area were common in this group of dialysis patients. Physical activity and dietary intake was suboptimal which could be due to a variety of factors. Interventions should aim to increase muscle mass in susceptible patients, increase physical activity, optimize dietary intake and reduce obesity. Financial assistance for food purchasing should be explored.

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**ZELMARIE BESELAAR**



**Assessment of comorbid conditions in  
hormone-positive postmenopausal breast  
cancer patients using the updated Charlson  
Comorbidity Index**

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## **NONCOMMUNICABLE DISEASES (3)**

### **ASSESSMENT OF COMORBID CONDITIONS IN HORMONE-POSITIVE POSTMENOPAUSAL BREAST CANCER PATIENTS USING THE UPDATED CHARLSON COMORBIDITY INDEX**

**Karin Baatjes (University of Stellenbosch), Maritha Kotze (University of Stellenbosch), Zelmarie Beselaar (University of Stellenbosch)**

**Introduction:** The prevalence of cancer and comorbidities increase with advancing age. Scoring indices, such as the Charlson Comorbid Index (CCI), can aid clinician decision-making and prognostication in the elderly. The present study investigated the prevalence of comorbid conditions of the updated CCI in postmenopausal breast cancer patients, as well potential associations with biochemical markers and genotyping data. **Methods:** Clinical, biochemical and genetic data of postmenopausal breast cancer patients, aged 50-80 years old, recruited from Tygerberg Academic Hospital Breast clinic into study S13/05/103, were analysed. Further information was obtained from hospital records and lifestyle information were self-reported by patients in a questionnaire. Basic body measurements were taken to determine their body mass index (BMI). **Results:** Of the 122 participants, 14 had a CCI score greater than 0, indicating comorbid diseases. Renal and chronic pulmonary disease were the most prevalent, identified in 35% each, followed by congestive heart failure (29%). Up to 66% of participants with the aforementioned diseases had a BMI above normal limits. No participant with rheumatic conditions had an increased BMI. Increased homocysteine (Hcy) levels were associated with a lower BMI in the comorbid population, with hetero- and homozygosity for MTHFR 677C>T detected in 2 and 1 patients, respectively. **Discussion:** Our analysis reveals that among breast cancer patients, the most prevalent comorbid conditions were renal disorders, chronic pulmonary disease and congestive cardiac failure, which differed from other studies. Many participants had an increased BMI, however there was no clear association between the CCI score and an increase in either BMI or Hcy, indicating that obesity might not be the driving force behind these conditions. MTHFR 677C>T, known to contribute to Hcy, was detected in patients with elevated levels. A small study sample and patient factors, including age, race and smoking, need to be considered when evaluating the results.

## **Noncommunicable Diseases: POSTERS (1)**



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MINETTE STEYN



**Skin cancer in a South African tertiary care dermatology clinic: A retrospective study.**

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## **NONCOMMUNICABLE DISEASES (POSTER 1)**

### **SKIN CANCER IN A SOUTH AFRICAN TERTIARY CARE DERMATOLOGY CLINIC: A RETROSPECTIVE STUDY**

**Johann de Wet (Tygerberg Hospital), Minette Steyn (Stellenbosch University)**

Background: Skin cancer is a growing health concern worldwide. It is the most common malignancy in South Africa and comprises mainly basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and malignant melanoma (MM). Although it places a large stress on the overburdened public healthcare sector of South Africa there is very limited local scientific data available regarding skin cancer. Objectives: The aim of this study is to determine the (i) frequency; (ii) variations in body site; (iii) age, sex and ethnic distribution and (iv) histological type of skin cancers in a South African tertiary care dermatology clinic. Methodology: We will review the demographics of patients who underwent a biopsy for skin cancer as well as the clinical and histological features of skin cancers diagnosed between September 2015 and August 2016 at the Tygerberg Academic Hospital, Cape Town, Western Cape, South Africa. Results: A total of 696 biopsies were identified. The total number of participants were 443 with a mean age of 64 years at the time of biopsy. Clinical suspicion of skin cancer was histologically confirmed in 64.89% of cases. Most common sites of biopsies were as follows: head (25.47%), neck (15.97%), hand (15.25%), arm (11.65%), leg (8.06%) and chest (6.33%). The most common skin cancer identified was basal cell carcinoma (36.06%) followed by squamous cell carcinoma (12.50%), squamous cell carcinoma in-situ (5.32%), Kaposi sarcoma (4.45%) and cutaneous malignant melanoma (4.02%). Conclusion: Skin cancer remains a burden on South Africa's stressed health care system. There is a requirement for further local data regarding prevalence as well as reporting and prevention strategies.

## **Perioperative Sciences: ORALS (2)**

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**CHRISTIAAN KOTZÉ**



**Cardiac magnetic resonance imaging vs trans-oesophageal  
echocardiography to detect left atrial thrombi before  
percutaneous balloon mitral valvotomy for mitral stenosis– A  
pilot study**

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## **PERIOPERATIVE SCIENCES (1)**

### **CARDIAC MAGNETIC RESONANCE IMAGING VS TRANS-OESOPHAGEAL ECHOCARDIOGRAPHY TO DETECT LEFT ATRIAL THROMBI BEFORE PERCUTANEOUS BALLOON MITRAL VALVOTOMY FOR MITRAL STENOSIS: A PILOT STUDY**

**Christiaan Kotze (, Faculty of Medicine and Health Sciences, Stellenbosch University), Dr Alfonso Pecoraro (Division of Cardiology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University), Dr Anne-Marie Du Plessis (Department of Radiology, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg Hospital), Dr Christelle Ackermann (Department of Radiology, Faculty of Medicine and Health Sciences, Stellenbosch University, Tygerberg Hospital), Dr Hellmuth Weich (Division of Cardiology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University), Dr Philip Herbst (Division of Cardiology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University), Prof Anton Doubell (Division of Cardiology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University)**

**Introduction:** Detection of left atrial (LA) and LA appendage (LAA) thrombus prior to percutaneous balloon mitral valvotomy (PBMV) is critical to prevent thrombo-embolism. Trans-oesophageal echocardiography (TOE) is the gold standard for detecting atrial thrombi, but its interpretation remains challenging in some cases. Cardiac Magnetic Resonance Imaging (CMRI) is considered the gold standard modality for tissue characterization, including thrombus identification, elsewhere in the heart. However, it is poorly studied in the setting of LAA thrombus detection and particularly so in the setting of mitral stenosis pre-PBMV. **Methods:** Prior to PBMV, patients underwent both TOE and CMRI within 48h of each other, assessing for the presence or absence of LA/LAA thrombus. TOE was performed in accordance with the British Society of Echocardiography guideline for a comprehensive study. All patients received CMRI at 1.5 Tesla utilizing sequences appropriate for detecting thrombi, incorporating systematic thin slices taken through the LAA in 3 image planes. All results were independently reported by the respective operators. **Results:** 21 patients have been included to date. TOE reported presence of thrombus in 7 cases, absence of thrombus in 11 cases and suspected thrombus in 3 cases. CMRI reported presence of thrombus in 9 cases and absence of thrombus in 12 cases. In 16 cases, there was agreement between TOE and CMRI. 5 cases of discrepancy were reviewed by the investigators and consensus reached ("gold standard"). In 3 cases where TOE reported suspected thrombus, CMRI confirmed the presence of thrombus. Both TOE and CMRI reported only 1 case each differing from the consensus opinion. All patients in whom thrombus was excluded underwent successful PBMV without thrombo-embolic events. **Conclusions:** Both TOE and CMRI identify or exclude thrombus with a high degree of certainty. CMRI offers a safe, non-invasive adjunct to TOE, adding value in difficult TOE cases.

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IZAK LOFTUS



The prevalence and sensitivity profile of positive  
bacterial and fungal cultures during  
pancreaticoduodenectomy at Tygerberg Academic  
Hospital

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## **PERIOPERATIVE SCIENCES (2)**

### **THE PREVALENCE AND SENSITIVITY PROFILE OF POSITIVE BACTERIAL AND FUNGAL CULTURES DURING PANCREATODUODENECTOMY AT TYGERBERG ACADEMIC HOSPITAL**

**Izak Loftus (University of Stellenbosch)**

**Introduction** Pancreatico-duodenectomy (PD) is a complex procedure associated with major post-operative morbidity in 30-50% of cases, of which infectious complications are the most significant. Pre-operative biliary stenting has the potential to contaminate the biliary tree and is associated with a higher rate of infectious complications. Administration of an effective prophylactic antibiotic may mitigate against this risk. **Aim:** To describe the range of positive bile cultures and antibiotic sensitivity in patients undergoing PD at Tygerberg Academic Hospital. **Methods:** A retrospective study involving all patients who underwent PD at Tygerberg Academic Hospital since the inception of the hepato-pancreatico-biliary unit in 2014. The total prevalence of positive bile cultures, the prevalence of different species and the sensitivity profiles were recorded and compared. The data were compared for patients who underwent pre-operative biliary stenting and those who did not. **Results** Thirty-seven patients underwent PD during the study period, of which 17(46%) were male and 20(54%) female. The median age was 52 years. Twenty-eight patients had bile cultures performed of which 29% and 32% grew a single organism and multiple organisms respectively. *Klebsiella* and *Enterobacter* species were the most commonly cultured organisms. Antibiotic resistance was common, especially to recommended and commonly used prophylactic antibiotics. **Conclusions:** Most patients undergoing PD have contaminated bile, often with resistant organisms. The prophylactic antibiotic regimen at Tygerberg Academic Hospital requires adjustment.



# **Violence, Injuries, Trauma & Rehabilitation: ORALS (5)**

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**WILNA COETZEE, LARISSA GELDENHUYS &  
ELZANNE MYBURGH**



**The effectiveness of Schroth exercises in adolescents with  
idiopathic scoliosis in decreasing the Cobb angle compared  
to non-surgical management: A Systematic Review and  
Meta-analysis**

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

### **THE EFFECTIVENESS OF SCHROTH EXERCISES IN ADOLESCENTS WITH IDIOPATHIC SCOLIOSIS IN DECREASING THE COBB ANGLE COMPARED TO NON-SURGICAL MANAGEMENT: A SYSTEMATIC REVIEW**

**Chante van Rooyen (Stellenbosch University Physiotherapy), Elzanne Myburgh (Stellenbosch University Physiotherapy), Francois Joubert (Stellenbosch University Physiotherapy), Larissa Geldenhuys (Stellenbosch University Physiotherapy), Lenka du Plessis (Stellenbosch University Physiotherapy), Nicol Vermeulen (Stellenbosch University Physiotherapy), Wilna Coetzee (Stellenbosch University Physiotherapy)**

**Background:** Adolescent idiopathic scoliosis (AIS) is one of the most common structural spinal deformities and becomes apparent in generally healthy children around the time of puberty. The Schroth method of exercise is a scoliosis-specific modality used to treat idiopathic scoliosis in young adolescents to reduce the progression of the scoliotic deformity and to delay or avoid the need of wearing a brace. **Objective:** To identify, critically appraise, evaluate and establish best available evidence for the effectiveness of Schroth exercises in comparison to non-surgical management (including observation or conservative management) in adolescents with idiopathic scoliosis to decrease the Cobb angle. **Results:** Four randomised control trials with an average PEDro score of 6.75/10 were included in this study. Results indicated that Schroth exercises had a significant effect in decreasing the Cobb angle ( $p < 0.05$ ) and in improving quality of life (QoL) in comparison to non-surgical management. The pooled effect of the intervention on QoL showed a significant result in favour of Schroth exercises at 12 weeks ( $p < 0.002$ ) and at 24 weeks ( $p < 0.0004$ ). **Conclusion:** Level II evidence suggests that Schroth exercises have a significant effect on reducing the Cobb angle and improving QoL in adolescents with idiopathic scoliosis when compared to non-surgical management. The minimum duration of the intervention should span across 12 weeks to have an effect on both these outcomes, but the treatment programme should last at least six months or longer to optimise results. Physiotherapists are encouraged to combine supervised Schroth exercises with conventional physiotherapy care and also include a supervised home exercise program to reach more favourable outcomes. Further research is needed to determine the long-term effects of Schroth exercises as well as to establish the effect on the respective domains of QoL, such as pain, function and self-image.

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**MARK JOHN ANDRIANATOS; GERDA RETIEF CARSTENS;  
WILMIEN LOUISE ESTERHUYZEN; LAUREN DARION  
GOLIATH; STEPHANI LE ROUX; ERNEST JOHAN NEL**



**The effect of pre-exercise low-level laser therapy compared to placebo on exercise induced muscle damage of the knee extensors in 18-35 year-old males: a systematic review and meta-analysis**

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## **VIOLENCE, INJURIES, TRAUMA & REHABILITATION (2)**

### **THE EFFECT OF PRE-EXERCISE LOW-LEVEL LASER THERAPY COMPARED TO PLACEBO ON EXERCISE INDUCED MUSCLE DAMAGE OF THE KNEE EXTENSORS IN 18-35-YEAR-OLD MALES**

**Ernest Nel (Stellenbosch University), Gerda Carstens (Stellenbosch University), Lauren Goliath (Stellenbosch University), Mark Andrianatos (Stellenbosch University), Stephani le Roux (Stellenbosch University), Wilmien Esterhuyzen (Stellenbosch University)**

**BACKGROUND:** Muscle stiffness and swelling is experienced after eccentric muscle contraction due to inflammatory processes. Low level laser therapy is an effective treatment to reduce inflammation, which causes exercise induced muscle damage (EIMD) and pain. **OBJECTIVES:** To systematically review the evidence on the effect of pre-exercise low-level laser therapy compared to placebo intervention in decreasing (EIMD), specifically MVC and pain, in males aged 18-35. **METHODOLOGY:** Seven computerised databases were used to conduct the searches for randomised controlled trials: PubMed, Cochrane Library, PEDro, Scopus, EBSCO Host, ScienceDirect, OTSeeker . The search terms included: Low Level Laser Therapy, Phototherapy, Electrical Stimulation Therapy, Quadriceps, Muscle Damage. The articles were appraised using the PEDro Scoring Scale and results were tabulated and described. **RESULTS:** Six trials were included with PEDro scores ranging from 6/10 to 10/10. Majority of the studies indicated that pre-exercise LLLT restored muscle power and decreased pain as opposed to placebo pre-exercise LLLT . **CONCLUSION:** The study concluded that pre-exercise LLLT significantly decreases pain ( $p=0.0009$ ) and restores muscle power ( $p<0.0001$ ). LLLT treatment before knee extensor eccentric protocol exercise was effective in lowering the damaging effects of exercise on muscle function measured using VAS and MVC. Physiotherapists are therefore encouraged to make use of pre-exercise LLLT to decrease pain (VAS) and restore muscle power (MVC).

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**DANIE KRYNAUW**



**The burden and profile of acute spinal orthopaedic  
trauma at a major tertiary hospital in the Western Cape,  
South Africa**

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## **VIOLENCE, INJURIES, TRAUMA & REHABILITATION (3)**

### **SPINAL TRAUMA: THE BURDEN AND CLINICAL PROFILE AT A MAJOR TERTIARY HOSPITAL IN THE WESTERN CAPE**

**Danie Krynauw (Stellenbosch University), Sanesh Miseer (Stellenbosch University), Theresa Mann (Stellenbosch University)**

Background: Spinal orthopaedic trauma continues to be an important cause of morbidity, often affecting young and healthy individuals. This severe form of injury typically requires specialist care and anecdotal evidence suggests that spinal trauma contributes significantly to the burden on the Spinal Unit at Tygerberg Hospital. However this has never been formally investigated. Therefore, the aim of this study was to describe the burden, clinical profile and resource use associated with spinal orthopaedic trauma admissions to Tygerberg Hospital. Methods: All patients admitted to the Tygerberg Hospital Spinal Unit between the 1st of October 2016 and the 30th of September 2017 for spinal orthopaedic trauma were included in the study. Clinical and demographic information such as age, gender, residential district, mechanism of injury, region of spinal trauma, advanced radiological investigations, operating time and length of hospital stay was extracted from medical records and presented using descriptive analyses. Results: Overall burden was comprised of 180 patients and 192 admissions, including re-admissions. Most patients were male (n=121, 67%) and from the Cape Town Metro (n=120, 60%). Spine trauma to the cervical spine (n=85, 47%) and thoracolumbar spine (n=41, 23%) accounted for the majority of cases with motor vehicle accidents (n=87, 49%) and falls (n=46, 26%) identified as the most common mechanisms of injury. Almost all patients (n=165, 92%) required advanced imaging and 41% received operative management. The median hospital stay was 15 days with an interquartile range of 9 to 27 days. Conclusion: There was a significant burden of spinal trauma over the study period, of which the majority could be considered preventable. Furthermore, management of spinal trauma was very resource-intensive in terms of imaging, theatre time and hospital days. These findings highlight the need for prevention strategies aimed at reducing the burden of these injuries within our resource-limited setting.



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**MARIANNE BREYTENBACH & ASISIPHO  
TSOTSA**



**Mobility transition in older adults using an  
occupational lens**

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## **VIOLENCE, INJURIES, TRAUMA & REHABILITATION (4)**

### **MOBILITY TRANSITION IN OLDER ADULTS IN WORCESTER USING AN OCCUPATIONAL LENS**

**Asisipho Tsotsa (Rural Clinical School, Occupational Therapy), Isolde Burger (Rural Clinical School, Occupational Therapy), Kay De Villiers (Rural Clinical School, Occupational Therapy), Marianne Breytenbach (Rural Clinical School, Occupational Therapy), Retha-Mari Smith (Rural Clinical School, Occupational Therapy), Sharlotte Sehlapelo (Rural Clinical School, Occupational Therapy), Tamsin Ballantyne (Rural Clinical School, Occupational Therapy)**

**Introduction:** This study was conducted within a rural setting in Worcester, Western Cape, with the target population being able-bodied and sensory-impaired older adults aged 65 years and older. The objectives were to gather data on the places of interest among the older adult participants, the modes of transport they use to arrive at these places of occupation and the satisfaction they derived from their occupational engagement in these out-of-home occupations. **Methods:** Quantitative study design with 59 participants recruited by means of convenience sampling from Kaleidoscope, National Institute for the Deaf (NID) and the Worcester Community Day Centre. The WHODAS 2.0 and the Mobility of Older Adult and Satisfaction questionnaire were used. Data relating to forms of transport, places of interest, meaning and satisfaction derived from engagement in out-of-home occupations were obtained. Data analysis were done using the SPSS version 24 and STATA version 15. **Results:** Findings concluded that walking is the most frequently used mode of transportation for older adults in this population, followed by transportation opportunities from friends. Participants housed at NID and Kaleidoscope were primarily dependent on the institution transport to get to their places of occupation. The places of interest that the older adults visited most frequently were grocery stores, places of worship, the hospital, clothing stores and friends. In general, the levels of satisfaction with all forms of transport were relatively high. **Conclusion:** Mobility transition within this population has displayed a minor change in trajectory, since walking has been recorded as the most frequently used mode of transport. What has changed, however, is the physical demands expected for this activity as a result of the wear and tear of the human body. Overall, the environmental barriers experienced by the participants contributed greatly to the participants' occupational engagement and thus, their satisfaction with their modes of transport.

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GEORGINA FROST, THAKEERAH KHAN, EUGENIE  
LAMPRECHT, DAYLE MCLOUGHLIN, JATAN PATEL,  
DANIELLA PAZDA and ALEXIS PARTRIDGE



The effect of ischemic compression versus electrotherapy on  
cervical active range of motion and pain in patients with  
myofascial trigger points in the trapezius muscle: a systematic  
review

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## **VIOLENCE, INJURIES, TRAUMA & REHABILITATION (5)**

### **THE EFFECT OF ISCHEMIC COMPRESSION VERSUS ELECTROTHERAPY ON PAIN AND RANGE OF MOTION IN PATIENTS WITH MYOFASCIAL TRIGGER POINTS IN THE TRAPEZIUS MUSCLE: A SYSTEMATIC REVIEW**

**Alexis Partridge (Stellenbosch University), Daniella Pazda (Stellenbosch University), Dayle McLoughlin (Stellenbosch University), Eugenie Lamprecht (Stellenbosch University), Gakeemah Inglis-Jassiem (Stellenbosch University), Georgina Frost (Stellenbosch University), Jatan Patel (Stellenbosch University), Thakeerah Khan (Stellenbosch University)**

**Introduction:** Myofascial trigger points (MTrPs) are clinically identified hyperirritable nodules in a taut band of skeletal muscle causing a decrease in cervical active range of motion (AROM) and an increase in pain, among other symptoms, affecting the function of the muscle. Ischemic compression (IC) and electrotherapy (ET) are often used to treat MTrPs in the trapezius muscle. The aim of this systematic review was to identify, clinically appraise and evaluate available evidence for the effectiveness of IC on increasing cervical AROM and decreasing pain in adults presenting with MTrPs in the trapezius muscle compared to ET modalities. **Methods:** Eight computerized bibliographical databases accessed from inception to April 2018 through the Stellenbosch University library including; Cochrane, EBSCO Host: CINAHL, EBSCO Host: SPORTDiscus, Google Scholar, PEDRO, Pubmed, Science Direct and Scopus were searched. Studies were included if participants were between the ages of 18 and 65 with palpable MTrPs. The PEDro scale was used to appraise methodological quality. Acquiring ethical approval and participant consent was not necessary as this was secondary research. **Results:** Modalities evaluated were IC and ET (ultrasound, Laser and TENS). Overall, the results indicated an improvement with both interventions but ET was more effective in increasing cervical AROM and decreasing pain. ET was the most effective treatment, in two out of the three studies, when measuring cervical AROM. IC was statistically significant in increasing cervical AROM in the remaining study. Two of the four studies assessed pain intensity and ET was found again to be more effective than IC. **Conclusion:** Level II evidence used in this systematic review supports the use of ET over IC in increasing cervical AROM and decreasing pain in participants with MTrPs in the trapezius muscle. Physiotherapists are advised to use the preferred treatment of ET, but in low socio-economic clinical settings IC remains an applicable and feasible treatment option.