

65th Annual Academic Day 18-19 August 2021

Annual Academic Day Undergraduate Student Presentations 2021

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SPADE BREEDT



AN IN-VIVO REGENERATION
ASSESSMENT OF THE CELL-BASED MYOCARDIAL PATCHES & PERICARDIAL INFARCT PATCHES IN CONJUNCTION
WITH STROKE AND MYOCARDIAL INFARCTION



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C. Coetzee, N. Grey, R. Pieterse, S. C. Hagan,
F. Chow, T. L. G. van der Merwe, E. J. J. de Waard



Prevalence and characteristics of HIV-associated stroke in a tertiary hospital setting in South Africa



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Carla da Silva, Mawela Ismail, Nadra Msa, Ahdry Richardson, Carla van Esten



Occupational therapy to patient rehabilitation recovery and functional outcomes for COVID-19 patients



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Mr Yusuf Doornik
Prof de Vries
Dr David Ruyterwest



Non-traumatic emergency neurosurgical burden in a public neurosurgical service



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Understanding the importance of time to the impact with time resources: SA Speech-Language Therapists and Interprets' stress relationship



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LIEKLE MCDUNHOE, MORGAN HOWELL



The Perception of Stakeholders on the Potential Benefits of a Community Vegetable Garden in Bishop Lemo



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S. Prabhakar, J. Menezes, A. J. Prabhakar



The prevalence and electrocardiogram features of patients with atrial fibrillation in a tertiary setting in the Western Cape, South Africa



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Sahib Khatri, Rishi Varshni, Parvathi Madhavan, Ignatius Marimuthu, Megan Smit, Anand Jayaraman, Ananya Sankar, Isabella S. Naidoo, Sushant Kishore



The Use of Social Media as a Source of Information, Education and the Disruptive Capacity: Impact of COVID-19 on the Stellenbosch University



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Health Systems Strengthening (3)

65th
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**Yenzokuhle Lwandile Ricki Khumalo, Nompumelelo
Nzuza, Nolitha Radebe, Nabeela Olday, Caitlin Faith
Clarke**



**Understanding the importance of having a big
impact with little resources: SA Speech-Language
Therapist(s) and Interpreter(s) unique relationship**

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HEALTH SYSTEMS STRENGTHENING (1)

Working with interpreters in Speech-Language Therapy for children aged birth to six years: A scoping review

Miss Yenzokuhle Khumalo¹, Miss Nolitha Radebe¹, Miss Caitlin Clarke¹, Miss Nompumelelo Nzuzo¹, Miss Nabeela Olday¹, Dr Berna Gerber¹

¹*ivision Speech-, Language-, and Hearing Therapy; Faculty of Medicine and Health Sciences, Stellenbosch University*

Background: Many countries are multicultural and multilingual. Providing speech-language therapy services to children with a first language and/or language of teaching and learning which the therapist is not proficient in may restrict the effectiveness of speech-language therapy. Working with interpreters may assist to accomplish comprehensible and meaningful communication with the client and/or their caregiver(s), when providing speech-language therapy services.

Objectives: The study aimed to describe the roles of interpreters, the reported strategies used by interpreters and/or speech-language therapists (SLTs), recommendations for SLTs for working effectively with interpreters, and areas where research is insufficient and further research should be prioritised.

Method: A scoping review methodology was used which comprised of five phases. Electronic databases were used to identify relevant sources of evidence according to inclusion criteria.

Results: Eight sources of evidence met the inclusion criteria. The strategies for working effectively with interpreters that were most frequently reported were: explaining the order of assessment tasks and tools to interpreters, using the BID method and adopting a more collaborative approach throughout the assessment process. Four sources reported that conveying and clarifying information, facilitating working relationships between families and SLTs, and providing cultural clarification during assessments and intervention, were roles of the interpreter.

Conclusion: The scoping review indicates that there is a lack of qualitative research studies that allow a more comprehensive understanding of current practices across multiple countries and languages. There is also an urgent need for development and evaluation of training programmes and a collaboration model for SLTs and interpreters working together.

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LIZELLE NIEUWOUDT, MEGHAN HOWELL



**The Perception of Stakeholders on the Potential
Benefits of a Communal Vegetable Garden in Bishop
Lavis**

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HEALTH SYSTEMS STRENGTHENING (2)

The Perceptions of Stakeholders of the Potential Benefits of a Communal Vegetable Garden in Bishop Lavis

Miss Lizelle Nieuwoudt¹, Miss Meghan Howell¹, Miss Papama Fokwana¹, Miss Tegan Scorgie¹
¹University Of Stellenbosch

ABSTRACT

Background:

The Bishop Lavis Communal Vegetable Garden (CVG) was established by a contracted registered dietitian, the Department of Agriculture and the Department of Health in October 2019. Current management of the garden was handed to healthcare professionals at the BL Community Day Centre. Limited information is currently available in South Africa and in the Western Cape province on CVGs and the benefits and limitations of these projects. Therefore, the study aimed to explore stakeholders' perceptions of the potential benefits of the CVG in Bishop Lavis.

Methods: A qualitative study design was adopted. Stakeholders involved in the CVG were purposely selected. Semi-structured interviews were conducted using a semi structured interview guide. Interviews were audio recorded, transcribed and analysed using the Atlas.ti programme. Thematic content analysis was applied. Themes were formed using a deductive and inductive approach.

Results: Three main themes emerged, focusing on perceptions on benefits, accomplishments and limitations. Subthemes for these main themes pointed towards overlapping concepts. Perceptions on benefits included improved health and nutrition through dietary diversity, creating affordable food procurement, and improving self-empowerment. Accomplishments regarding the CVG included it being a health education tool, education and skills development, as well as creating a therapeutic environment. Predominant concepts under the theme limitations were gatekeeping, social involvement & participation, planning & collaboration, theft and resources & finances.

Conclusion: An intervention such as this, may require further investigation into collaborative efforts to ensure sustainability through monitoring and evaluation to further expand benefits and accomplishments.

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Sabrina Riviere, Kim Yammin, Koena Madibana, Agnes Nonyane, Megan Kreft, Helena Weideman, Brittany Smith, Jessica Schmid, Daniella Hopwood



THE USE OF SOCIAL MEDIA AS A SOURCE OF NUTRITION
INFORMATION AND THE PERCEIVED ACCURACY THEREOF BY
STUDENTS AT STELLENBOSCH UNIVERSITY

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HEALTH SYSTEMS STRENGTHENING (3)

The use of social media as a source of nutrition information and the perceived accuracy thereof by students at Stellenbosch University

D Hopwood¹, M Kreft¹, K Madibana¹, A Nonyane¹, Miss Sabrina Riviere¹, J Schmid¹, B Smith¹, H Weideman¹, K Yammin¹

¹*Division of Human Nutrition, Department of Global Health, Faculty of Medicine and Health Sciences, Stellenbosch University*

Nutrition misinformation is prevalent on SM due to lack of professional gatekeeping of user-generated, health content.

The study aimed to assess SM usage as a platform for obtaining nutrition information by undergraduate students at Stellenbosch University and how the accuracy thereof is evaluated.

This descriptive cross-sectional study, with an analytical component was conducted on undergraduate students (18-25 years) registered at Stellenbosch University (2021). Data was collected using a content- and face-validated online questionnaire which was self-administered.

Out of 2318 participants, 1615 accessed nutrition information on SM. All faculties were represented, 69% were females and 55% related to a health condition. SM platforms most used were Instagram (91%) and YouTube (87%), however, YouTube (96%) was accessed most for nutrition information. Females used SM significantly more than males ($p=0.03$) Minority (17%) of participants “actively” turn to SM for nutrition information, while majority (54%) only engaged if it happened to appear on their feed. The preferred nutrition content was what to eat in a day (83%). Participants felt most comfortable following a registered dietitian (64%) for accurate nutrition information. Relatability (87%) motivated participants to follow SM influencers and 16% trusted their claims. Although 91% understood what evidence-based nutrition information means, 77% of participants struggled to determine the accuracy of nutrition information on SM, with females indicating significantly more difficulty than males ($\text{Chi}^2 = 39, p=0.00$).

The sample engaged with nutrition information on social media. Participants understood what evidenced-based nutrition information is, however, majority lack the skill in determining information accuracy on SM. The participants trust dietitians most as a source of nutrition information, however, this does not correlate with the pages they currently follow for nutrition content.

Infectious Diseases (2)

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**C. Corbett, N. Brey, R. Pitcher, S. O'Hagan,
F. Chow, T. Esterhuizen, E. Decloedt**



**Prevalence and characteristics of HIV-
associated stroke in a tertiary hospital
setting in South Africa**

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INFECTIOUS DISEASES (1)

Prevalence and characteristics of HIV-associated stroke in a tertiary hospital setting in South Africa

Mr Craig Corbett¹, Dr Naeem Brey^{1,2}, Dr Suzanne O'Hagan^{1,3}, Prof Richard Pitcher^{1,3}, Ms Tonya Esterhuizen^{1,4}, Prof Felicia Chow⁵, Prof Eric Decloedt^{1,6}

¹Stellenbosch University, ²Division of Neurology, Department of Medicine, ³Division of Radiodiagnosis, Department of Medical Imaging and Clinical Oncology, ⁴Biostatistics Unit, Division of Epidemiology and Biostatistics, ⁵Departments of Neurology and Medicine (Infectious Diseases), University of California, San Francisco, ⁶Division of Clinical Pharmacology, Department of Medicine

Background: Data on HIV-associated stroke in South Africa in the antiretroviral treatment (ART) era is limited. We determined the prevalence of HIV in patients presenting with acute symptomatic stroke, and compared risk factors, clinical characteristics and brain-imaging with age-matched HIV- patients.

Methods: We conducted a retrospective study of adults presenting with any type of stroke to Tygerberg Hospital in the 12-month period. Patients were identified by CT-brain reports and ICD.10-codes. HIV status was ascertained from laboratory data, and HIV+ and HIV- patients were age-matched (1:2 ratio). Clinical and imaging data were extracted from medical records.

Preliminary results: We identified 884 strokes: 82 were HIV+ (9.3%), 496 HIV- (56.1%), and 306 HIV-unknown (34.6%). Mean age at presentation in HIV+ was 46±11 years compared to 55±14 years in HIV- (p<0.001). Hypertension and dyslipidaemia were significantly less prevalent in HIV+ (hypertension: 53.7% vs 70.1%, p=0.011; dyslipidaemia: 13.4% vs 29.9%, p=0.005). Concurrent infection was more prevalent in HIV+ (25.6% vs 4.9%, p=<0.001), largely in patients with CD4 count <200cells/mL. HIV+ with higher CD4 counts (>200cells/mL, 51.3%) had more traditional risk factors compared to their lower CD4 counterparts. Among HIV+, 68.3% were on ART, and 39.3% had been started or restarted on ART within the past 6-months. The HIV+ radiological phenotype had more bilateral strokes (12.2% vs 3.0%), basal ganglia infarcts (35.6% vs 18.3%, p=0.014) and involvement of >1 vascular territory (22.0% vs 7.7%, p=0.009). Clinical presentation, ischaemic stroke aetiology, and in-hospital mortality did not differ between groups.

Conclusion: Stroke patients with HIV were younger, had less traditional cardiovascular risk factors, and more concurrent infections than patients without HIV, especially those with a lower CD4 count. ART reinitiation was high. Understanding the multifactorial mechanisms underlying increased stroke risk, including associated infections and potential ART-associated immune reconstitution, is crucial and needs further study.

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**Carla da Silva, Maseeha Ismail, Qadira Mia,
Ashley Richardson, Carla van Eeden**



**Occupational therapy inpatient rehabilitation
interventions and the functional outcomes for
COVID-19 patients**

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INFECTIOUS DISEASES (2)

Occupational therapy inpatient rehabilitation and functional outcomes for Covid-19 patients

Miss Carla Silva¹, Miss Ashley Richardson², Miss Carla Van Eeden³, Miss Qadira Mia⁴, Miss Maseeha Ismail⁵, Miss Michelle Elizabeth Uys⁶, Mrs. Munira Hoosain⁷

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University (supervisor), ⁷Lecturer, Division of Occupational Therapy, Faculty of Medicine and Health Sciences,

Stellenbosch University (supervisor)

BACKGROUND

An increasing demand for rehabilitation is expected due to an increasing number of COVID-19 patients spending prolonged time in the ICU. Rehabilitation is a crucial part of recovery for COVID-19 patients, as the decline in cognitive, psychosocial, and/or physical function is likely to cause limitations in their occupational participation and performance. Occupational therapists have an important role in assisting patients to return to their activities of daily living after COVID-19.

PURPOSE

The study aims to describe inpatient rehabilitation interventions implemented by occupational therapists to enhance the functional outcomes of COVID-19 patients, in a subacute hospital, in Cape Town, South Africa. This study enables the sharing of clinical experience within the occupational therapy profession by describing current interventions for COVID-19 patients and their function and activity participation pre- and post-discharge.

METHOD

A collective case study design, using qualitative description, will be used. Data will be collected through individual semi-structured interviews with three occupational therapists, discussing one patient each. Functional Independence Measures, occupational therapy reports, and therapy notes will be used as additional information sources. The data will be analyzed through inductive, qualitative content analysis.

RESULTS

The key findings included that occupational therapists use a variety of occupation-based interventions to address the endurance, strength, cognitive function, psychological factors, and oxygen saturation to increase the functional independence in ADLs needed before the patient is ready to be discharged and to return home. Occupational therapists use a client-centered approach to consider the personal factors of the patient, the underlying COVID-19 pathology, the impact of the care received in the acute setting and the socio-economic circumstances of the patient to reason which assessments to use, how to fund the intervention and to determine what role they can play as an occupational therapist in the patient-specific intervention.

Mental Health & Neurosciences (1)

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SHADÉ BREEDT



**IN THE EYE OF THE BEHOLDER:
MEASUREMENT OF THE OPTIC NERVE SHEATH DIAMETER &
EYEBALL TRANSVERSE DIAMETER ON CT & ITS CORRELATION
WITH RAISED INTRACRANIAL PRESSURE**

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MENTAL HEALTH & NEUROSCIENCES (1)

In the eye of the beholder: Measurement of the optic nerve sheath diameter and eyeball transverse diameter on computed tomography and its correlation with raised intracranial pressure

Ms Danyca Shadé Breedt¹, Prof Adriaan Vlok¹

¹*Stellenbosch University*

Background: The gold standard for determining intracranial pressure (ICP), intraventricular catheter monitoring, is an invasive procedure with associated risks. Non-invasive investigations such as magnetic resonance imaging (MRI) and ultrasonography have proven a correlation between the optic nerve sheath diameter (ONSD) and increased ICP. However, unlike MRI and ultrasound, respectively, computed tomography (CT) is widely available and less operator-dependent. The study aimed to investigate the correlation between increased ICP and the ONSD, ETD, and ONSD/ETD ratio on CT scan(s) of neurotrauma patients.

Methods: A retrospective review was performed of patients admitted into Tygerberg Hospital Neurosurgical ICU who suffered a traumatic head injury over a 4-year period with ICP measurements and brain CT scan(s). Descriptive statistics were computed for variables of interest and the relationship between the Glasgow Coma Score (GCS), ICP, 3mm and 9mm ONSD, ETD, ONSD/ETD ratios, Marshall grade and outcomes were assessed.

Results: Of the total 74 patients admitted, 96% were male. The most frequent mechanism of injury was assault (48.6%). There was no significant correlation between ICP and ONSD, ETD or ONSD/ETD ratios. Notably, in our study, the Marshall grade was not significantly associated with ICP measurements. There was, however, a significant association between the Marshall grade and the 3mm and 9mm ONSD and ONSD/ETD ratios. The mortality rate was 36.5%. The GCS was significantly associated with the Glasgow Outcome Score.

Conclusions: Studies have shown variable results regarding a correlation between ICP and ONSD or ETD on CT. Our study agreed with literature that showed no significant association. In contrast to previous studies, our study not only investigated the correlation between ICP and single variables (ONSD and ETD) but also the ONSD/ETD ratio. The study concluded that one cannot accurately and consistently demonstrate raised ICP by observing the ONSD, ETD or ONSD/ETD ratio on CT in neurotrauma patients.

Non-Communicable Diseases (2)

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S Potgieter, J Moses, AF Doubell



The prevalence and electrocardiogram features of patients with atrial fibrillation in a tertiary setting in the Western Cape, South Africa

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NON-COMMUNICABLE DISEASES (1)

The prevalence, characteristics, associated co-morbidities and medical management of patients with atrial fibrillation in a tertiary setting in the Western Cape

Dr Sunita Potgieter¹, Prof Anton Doubell, Dr Jane Moses

¹Stellenbosch University

Introduction: Atrial fibrillation (AF) is a supraventricular tachycardia characterized by uncoordinated atrial activation, sub-optimal atrial contraction and stasis causing thromboembolic risk. The prevalence of AF in developed countries is high, with less known in developing countries, where patients display different cardiovascular risk factors. The study aimed to determine the prevalence and electrocardiogram (ECG) features of patients with AF in a tertiary setting in the Western Cape.

Methods: All ECGs (n=13414) recorded on the MUSE® system at Tygerberg Academic Hospital for patients >18 years between 01/07/2018-30/06/2019 were screened for AF and ECG features recorded. Ethics (U19/10/043) and hospital approval was obtained. **Results:** An AF prevalence of 3.4% (n=460) was found. The mean age was 65.4 (\pm 13.9) years. 51.5% (n=237) were female and 48.5% (n=223) male. An irregular, narrow complex rhythm was present in 79.3% (n=365) cases. Additional ECG findings such as LVH (11.1%; n=51), RVH (0.7%; n=3), presence of pathological Q-waves (22.6%; n=104) and repolarisation abnormalities were recorded. **Discussion:** An AF prevalence of 3.4% is in keeping with published international data but lower than previously reported in the South African population (SA). This prevalence is likely to be a more accurate reflection of the burden of AF in SA as it assessed ECGs done in all patients and not only patients referred for cardiac assessment. Detailed analysis of the ECGs revealed chamber enlargement, presence of pathological Q-waves and conduction defects. Linking these findings to specific etiologies remains speculative and will require evaluation of the clinical and echocardiographic data to elucidate.

NON-COMMUNICABLE DISEASES (2)

A description and needs assessment of the food offering to students at the Faculty of Medicine and Health Sciences of Stellenbosch University, Western Cape, South Africa

Miss Karla Vogel¹, Dr Nelene Koen, Mrs Yolande Smit, Miss Nicole Van Tonder, Miss Caitlynn Klate, Miss Nadia Cloete, Miss Anri Pretorius, Miss Chelsey Ann Bosman, Miss Hesna Theron, Miss Marieke Reitz

¹*Stellenbosch University*

Unhealthy eating patterns formed during the transition phase to student life can continue throughout adulthood, contributing to increased development of non-communicable diseases.

The objectives were to describe the variety and prices of foods and drinks offered at the Faculty of Medicine and Health Sciences (FMHS) and to determine factors influencing food choices of students. In this cross-sectional descriptive study with an analytical component, census sampling of all seven food outlets and registered undergraduate students was done. Data was collected using an observational checklist and electronic survey (N=208).

Majority (85.6%) of participants purchased food on campus. No significant differences ($p > 0.05$) between age, gender, study year or degree was observed. Students expressed the need for a larger variety (69.0%) and availability of healthier food (84.0%); fresh and good quality food (88.0%) and more affordable food (89.0%). Half (52.0%) of participants disagreed that the food on campus meet their needs and preferences, while 65.7% disagreed that the food provided is always tasty and visually appealing.

Fast food options were available at 71.42% of outlets. More outlets ($n=4$, 57.14%) provided brown bread options compared to white bread ($n=3$, 42.86%). Fresh fruit were available at two (28.57%) outlets and chocolates at five (71.42%). Bottled water was available at all outlets and sugar-free carbonated drinks ($n=6$, 85.71%) were more readily available to students than sugar containing carbonated drinks ($n=5$, 71.42%).

These findings emphasize the need for healthier, more affordable food options at the FMHS tailored to the needs and preferences of students ensuring an enabling environment that will support students in making healthier food choices.

Perioperative Sciences (1)

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Mr Yusuf Docrat
Prof Ian Vlok
Dr David Roytowski



**Non-traumatic emergency neurosurgical
burden in a public neurosurgical service**

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PERIOPERATIVE SCIENCES (1)

Non-traumatic emergency neurosurgical burden in a public neurosurgical service

Mr Yusuf Docrat¹, Prof. Adriaan Johannes Vlok¹, Dr. David Roytowski¹

¹*Division of Neurosurgery, Stellenbosch University*

Introduction

Africa contributes over 15% of the global neurosurgical burden, yet has access to 1% of global neurosurgical services. Tygerberg Academic Hospitals (TBH, South Africa), neurosurgeon-population ratio is 1:1,500,000 exceeding the recommended global ratio of 1:100,000. The ever-present “pandemic of trauma” resulted in displacement of elective neurosurgery in theatre slates.

Methods

A quantitative review of time-matched operative logs of the TBH Neurosurgery Department between 2018 and 2020 with selected cohorts linked to COVID-19 lockdown alert level dates was analysed using descriptive statistics. Cases during the alert level sub-periods were categorised as elective, traumatic and non-traumatic emergency (NTE).

Results

Incremental growth of NTEs were observed between 2018 – 2019 with 28% elective surgery displacement. Between 2018 and 2019 elective surgery theatre lists made up less than 50% and less than 33% respectively of cases performed. In 2020 no elective surgeries were performed, and of the small number occurring on the elective list, all were NTEs.

In contrast, trauma cases increased by 13% in 2020 compared to 2019. While neurotrauma surgery declined during alert level 5 and 4, the trauma burden returned to pre-2019 levels in alert levels 3 and 2, correlated with the relaxation of alcohol ban.

Conclusions

COVID-19 lockdown alert levels did not contribute to increases in standard incidence of NTEs, possibly an outcome of delayed and severe presentation to TBH. TBH’s drainage area is ever-growing, increasing the standard incidence of NTEs with elective procedures likely increased displacement. This presents a challenge for specialist trainees, arising from insufficient elective pathology exposure. Graduated neurosurgeons may experience increased medicolegal incidents arising from inadequate training. Provision of dedicated neurosurgical emergency theatres may vastly improve efficiency of service delivery and training capacity.