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ABSTRACTS
ORAL PRESENTATIONS

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ABSTRACT TITLE

N-butanol fraction of Olax subscorpioidea attenuates lipopolysaccharide-induced depressive-like symptoms via inhibition of neuroinflammation and indolamine-2, 3-dioxygenase expression in mice

BACKGROUND/AIM

The leaves of *Olax subscorpioidea* are a mainstay in the management of inflammatory diseases and mental illness in folkloric medicine in Nigeria. Previous studies have shown its antidepressant and anti-inflammatory properties in experimental animals. Recently its antidepressant action was linked with the involvement of monoaminergic transmission. However, with accumulating evidences suggesting links between immuno-inflammatory signaling pathways and depression, there is a dearth of information linking antidepressant mechanism of *O. subscorpioidea* and its anti-inflammatory effects. We thus evaluated the effect of n-butanol fraction (BF) of *O. subscorpioidea* leaves on lipopolysaccharide (LPS)-induced depressive-like behaviours and we investigated its antidepressant effects with respect to its action on inflammatory and oxidative pathways.

METHODOLOGY

Sixty male Swiss albino mice were randomly assigned into six groups (n= 10). Mice were treated with vehicles of BF (5, 10, 20 mg/kg) or imipramine (10 mg/kg) intraperitoneal for seven days. Thirty minutes after treatment on day seven, animals were injected with LPS (0.83 mg/kg, i.p.) except group 1 (vehicle only). Twenty-four hours after LPS injection,

animals were assessed for depressive symptoms using sucrose preference test and immobility using tail suspension test (TST). Brain levels of pro-inflammatory mediators interleukin-1β (IL-1β) and tumor necrosis factor-α (TNF-α), oxidative stress biomarkers such as malondialdehyde and reduced glutathione and plasma level of corticosterone were measured by ELISA while expressions of indolamine-2,3-dioxygenase (IDO), inducible nitric oxide synthase (iNOS) and nuclear factor-kappa B (NF-κB) were quantified by immunohistochemistry.

RESULTS
LPS significantly (p < 0.05) increased immobility of mice in TST and decreased sucrose preference which is indicative of depressive-like behaviours. These behaviours were significantly attenuated by BF and imipramine when compared to controls. LPS increased levels of malondialdehyde, corticosterone, TNF-α, IL-1β, and increased expressions of IDO, iNOS and NF-κB and reduced level of glutathione in the brain. These were significantly reversed by treatment with BF and imipramine.

CONCLUSION
Attenuation of LPS-induced depressive-like phenotypes by BF and imipramine further indicates their antidepressant effects are comparable. The findings thus suggest that antidepressant actions may be related to inhibition of neuroinflammation, oxidative stress and IDO.

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ABSTRACT TITLE
Restoring awareness: rehabilitation interventions for unawareness of paralysis following stroke

BACKGROUND/AIM
Anosognosia for hemiplegia, or unawareness of motor deficits contralateral to a brain lesion, has lasting negative implications for the management and rehabilitation of patients. Recently some progress has been made towards the management and rehabilitation of anosognosia, however, to date no evidence-based treatment exists. A recent, bedside psychophysical intervention, namely self-observation by video replay, lead to a lasting remission of an acute stroke patient presenting with severe anosognosia. In the present study, we aimed to investigate how the use of similar simple self-observation techniques, using mirror and video replay, could restore or enhance awareness of motor paralysis.

METHODOLOGY
We will present a series of clinical case studies of patients with right hemisphere damage following stoke with a clinical diagnosis of anosognosia for hemiplegia. Two intervention-based protocols were applied using mirror and video-based self-observation techniques. Protocols also involved elements of rapport building and emotional support.

RESULTS
The results revealed that mirror and video-based self-observation had dramatic, immediate effects on awareness in both acute and chronic stages and it seemed to act as an initial trigger for eventual symptom remission. Nevertheless, these effects did not automatically generalise to all functional domains.

CONCLUSION
This study provides provisional support that mirror, and video-based self-observation may be included in wider rehabilitation programs for the management and restoration of anosognosia. A dynamic theoretical model of multifaceted nature of anosognosia, using a predictive coding framework, is proposed and discussed.

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ABSTRACT TITLE
Evaluating the prescribing and management practices of venlafaxine at a public sector psychiatric hospital

BACKGROUND/AIM
Neuropsychiatric conditions have been ranked third in South Africa according to some of the most recent reviews of disease burden, following human immunodeficiency virus/acquired immune

deficiency syndrome and other infectious diseases. The antidepressant class of selective noradrenaline reuptake inhibitors (e.g. venlafaxine) is relatively new on the market. Currently there is no published information concerning its prescribing and management patterns as well as the incidence and types of adverse effects experienced by patients in the public health sector of South Africa. This study aimed to evaluate the prescribing and management practices of venlafaxine to outpatients at a public healthcare sector psychiatric hospital. Objectives were to determine its prescribing patterns and compliance with recommended treatment guidelines as well as to identify its interactions and adverse effects.

METHODOLOGY
A retrospective drug utilisation review was conducted on the files of 85 outpatients aged 18-years and older who received venlafaxine treatment at the institution between 1 January 2017-31 December 2017.

RESULTS
Results showed that most of the patients were diagnosed with either a depressive (n=53; 62.36%) or anxiety-related disorder (n=13; 15.29%), suggesting that venlafaxine was correctly indicated for most of the patients (n=66; 77.65%). Concerning initiation of therapy, 78.82% (n=67) of the patients had their dose titrated. Data analysis revealed that 74.12% (n=63) patients did not experience any adverse effects from treatment with venlafaxine. Furthermore, blood pressure monitoring was conducted for 95.29% (n=81), body weight monitoring for 94.12% (n=80), pulse rate monitoring for 95.29% (n=81) and total cholesterol monitoring for 31.76% (n=27) of the patients. However, there was no information available for the majority of patients (n=80; 94.12%) to ascertain whether triglyceride, low-density lipoproteins, high-density lipoproteins and sodium levels were monitored, suggesting lipograms and electrolyte levels are target areas for improvement.

CONCLUSION
Venlafaxine therapy was fairly monitored metabolically and in the majority of cases initiation of venlafaxine was compliant with recommended treatment guidelines. Healthcare professionals should be trained on the optimal prescribing and monitoring guidelines to promote the rational use of venlafaxine.

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ABSTRACT TITLE
An evaluation of the prescribing and monitoring of clozapine at a public sector psychiatric hospital

BACKGROUND/AIM
Approximately 1% of the South African population suffers from schizophrenia. About 30% of patients with schizophrenia fail a trial of conventional antipsychotics. Clozapine has proven to be more effective than conventional antipsychotics in the management of both positive and negative symptoms of schizophrenia. The reputation of clozapine lies mainly with its repeated proven efficacy in the treatment of refractory schizophrenia. However, the risk of a haematological event such as neutropenia and agranulocytosis is the greatest with clozapine. Other common adverse effects include weight gain and metabolic syndrome. Haematological and metabolic monitoring is paramount with clozapine therapy. The aim of this study was to conduct a drug utilisation review on clozapine by investigating its prescribing and monitoring patterns in outpatients at a public sector psychiatric hospital as well as compliance with the recommended treatment guidelines.

METHODOLOGY
A retrospective drug utilisation review was conducted. A descriptive, cross-sectional research approach was implemented to analyse the data of 57 outpatients who were on clozapine therapy between 1 January 2017 and 31 December 2017.

RESULTS
Of the 57 patients, 78.95% (n=45) were on their first trial of clozapine. A total of 15 cases (26.32%) were compliant with guidelines for prescribing clozapine. Baseline haematological and metabolic monitoring was not evident in the majority of cases. Only 23.81% (n=10) cases were fully compliant with the haematological monitoring guidelines. Metabolic monitoring was evident in 80.70% (n=46) cases. However, there were inconsistencies in complying with the recommended intervals of the metabolic monitoring tests. Metabolic or endocrine co-morbid disease states were common in 29.82% (n=17) of the patients.

CONCLUSION
Haematological monitoring was found to be mostly inadequate. Adherence to haematological guidelines should be emphasised to minimise the fatal outcomes of agranulocytosis. The intervals for the various metabolic monitoring tests should also be adhered to. This would prevent predisposing patients to co-morbid disease states, and it would be useful in the management of adverse effects. Healthcare professionals should be trained on the existing prescribing and monitoring guidelines of clozapine. A prescribing and monitoring tool was designed to promote the rational use of clozapine.

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ABSTRACT TITLE
Scene Induced emotion processing in Parkinson's disease: BOLD-fMRI study

BACKGROUND
Parkinson's disease is a neurodegenerative disorder caused by loss of dopamine neurons in the substantia nigra pars compacta. Tremor, rigidity, and bradykinesia are the major symptoms of the disease. These motor impairments are often accompanied by affective and emotional dysfunctions which have been largely studied over the last decade. The aim of this study was to investigate emotional processing organization in the brain of patients with Parkinson's disease and to explore whether there are differences between recognition of different types of emotions in Parkinson's disease.

METHODOLOGY
We examined 18 patients with Parkinson's disease (8 men, 10 women) with no history of neurological or psychiatric comorbidities. All these patients underwent identical brain blood oxygenation level-dependent functional magnetic resonance imaging for emotion evaluation.

RESULTS
Blood oxygenation level-dependent functional magnetic resonance imaging results revealed that the occipito-temporal cortices, insula, orbitofrontal cortex, basal ganglia, and parietal cortex which are involved in emotion processing, were activated during the functional control. Additionally, positive emotions activate larger volumes of the same anatomical entities than neutral and negative emotions.

CONCLUSION
Results also revealed that emotional disorders associated with Parkinson's disease are increasingly recognized as disabling as classic motor symptoms. These findings help clinical physicians to recognize the emotional dysfunction of patients with Parkinson's disease.

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ABSTRACT TITLE
Combination Psychedelic Therapy to Treat Substance Use Disorders: Insights from Human and Rodent Studies

BACKGROUND
Ibogaine and 5-MeO-DMT have demonstrated rapid-onset anti-addictive effects in pre-clinical and human studies. When used in combination, pre-treatment with ibogaine potentiates the dosage effects of 5-MeO-DMT which may be due to ibogaine's NMDA receptor affinity working to prime the glutamatergic system. The therapeutic effects of both compounds in treating substance use disorders (SUDs) require further investigation and there are no published human neuroimaging findings of either treatment to date.

METHODOLOGY
We present the case of a 31-year-old male with moderate alcohol use disorder who sought treatment at an inpatient clinic in Mexico that utilized a sequential protocol with ibogaine hydrochloride (1550mg, 17.9mg/kg) and 5-MeO-DMT (bufotoxin 5-MeO-DMT content, 5-7mg). The patient received SPECT neuroimaging that included a resting-state protocol before, and 3 days after completion of the program.

In order to assess neurochemical changes following ibogaine administration, male Sprague-Dawley rats were divided randomly into two groups of n=10 to test ibogaine administration (single ibogaine HCl i.p. 50mg/kg) versus saline control. Upon termination, right dorsal hippocampal tissue was obtained for qPCR analyses of GRIA1 mRNA expression relative to three reference genes.

RESULTS
On post-treatment SPECT neuroimaging, increases in brain perfusion were noted in bilateral caudate nuclei, left putamen, right insula, as well as temporal, occipital, and cerebellar regions compared to the patient's baseline scan. The patient reported improvement in mood, cessation of alcohol use, and reduced cravings at 5 days post-treatment, effects which were sustained at one month, with a partial return to mild alcohol use at two months.

CONCLUSION

Serial administration of ibogaine and 5-MeO-DMT resulted in increased perfusion in multiple brain regions broadly associated with alcohol use disorders and known pharmacology of both compounds, which coincided with short-term therapeutic outcome. By down-regulating GRIA1 expression, ibogaine may prime glutamatergic neurotransmission affecting the complex interplay between the serotonergic and glutamatergic systems which control neuronal excitability in networks involved in SUD. Combination psychedelic therapy may be synergistic in treating chronic, treatment-resistant SUD which warrants further investigation.

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ABSTRACT TITLE

Childhood trauma and hippocampal subfield volumes in first-episode schizophrenia and healthy controls

BACKGROUND

Childhood trauma and schizophrenia are both associated with neuroanatomical abnormalities in the hippocampus, a stress-sensitive structure vulnerable to developmental insults. However, few studies have evaluated the effects of childhood trauma exposure on hippocampal morphometry in minimally treated first-episode schizophrenia patients. Here we aim to investigate the associations of childhood trauma with hippocampal subfield volumes in a cohort of antipsychotic-naive or minimally treated first-episode schizophrenia spectrum disorder patients and matched controls.

METHODOLOGY

79 patients with first-episode schizophrenia spectrum disorder and 82 matched controls completed the childhood trauma questionnaire and underwent MRI assessment. Hippocampal subfields were reconstructed using FreeSurfer 6.0. We considered inter-correlations between the various subfields, by entering them as dependent variables into a multivariate analysis of co-variance (MANCOVA), modeling for interactions between diagnosis, childhood trauma total score and gender while controlling for substance abuse, scanner sequence and age.

RESULTS

MANCOVA revealed a significant interaction between sex, childhood trauma total scores and diagnosis across hippocampal sub-regions (p=0.012). Bonferroni corrected post-hoc analysis revealed a significant sex*diagnosis*childhood trauma score interaction for the hippocampal fissure (F(1,161)=9.485,p=.002). Hippocampal fissure size showed a positive relationship with CA structures as well as whole hippocampal size in the larger sample.

CONCLUSION

Findings from the present study suggest that childhood trauma exposure exerts illness-specific effects on hippocampal structures in female patients with first-episode schizophrenia, consistent with increased stress sensitivity in this group.

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ABSTRACT TITLE

Preliminary evidence of the antidepressant-like properties of Sceletium tortuosum (ZembrinTM) in a genetic animal model of depression

BACKGROUND/AIM

Only 40% of patients with major depression (MD) respond to traditional antidepressant treatments, predominately acting on brain monoamines. Hence, a need exists for alternative treatments targeting multiple biological pathways. MD is described as a redox-inflammatory condition. Natural substances with anti-inflammatory actions may therefore have therapeutic value in the treatment of MD. This study explores the antidepressant activity of the South African plant Sceletium tortuosum in a rat model of depression.

METHODOLOGY

The depressive phenotype of Flinder's Sensitive Line (FSL) rats (n=12) was confirmed vs. Flinder's Resistant Line (FRL) control rats (n=6) in the forced swim test (FST). FSL rats received either the SSRI escitalopram (5, 10, 20 mg/kg; n=10/group) as positive control or a standardized extract of Sceletium tortuosum (Zembrin™; 5, 10, 25, 50 mg/kg; n=10/group), administered via oral gavage 24 hours, 6 hours and 1 hour before behavioural testing. Immobility, swimming and struggling as well as locomotor activity was assessed in the FST and OFT respectively.

Swimming and struggling is indicative of serotonergic and noradrenergic coping mechanisms, respectively. Data were analysed by Students t-test, 1-way ANOVA with Tukey's post-hoc test (p0.05 deemed significant), and Cohen's d statistics.

RESULTS

FSL rats showed significantly reduced swimming and struggling, and greater immobility than FRL rats, thus confirming their depression-like behaviour. Escitalopram 5 and 10 mg/kg significantly increased swimming. 5 mg/kg significantly decreased immobility in FSL rats. 50 mg/kg Sceletium tortuosum tended to increase swimming, while 25 and 50 mg/kg significantly reduced immobility, indicating antidepressant-like effects. 25 and 50 mg/kg Sceletium tortuosum tended to increase struggling with a large effect size. No confounding locomotor effects were evident.

CONCLUSION

This study confirms the face and predictive validity of the FSL model following acute antidepressant exposure. Preliminary data suggest that 25 and 50 mg/kg Sceletium tortuosum present with antidepressant-like activity. These results will be used to evaluate the efficacy of Sceletium tortuosum (ZembrinTM) alone and as adjunctive therapy compared to escitalopram following chronic treatment.

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ABSTRACT TITLE

Efavirenz distinctively modifies striatal serotonin and plasma oxytocin levels in rats without affecting depressive-like or ambulatory behaviour, compared to rats receiving cocaine

BACKGROUND/AIM

Efavirenz prompts numerous neuropsychological effects similar to that of known addictive substances and clinically has been reported to induce depressive-like symptomologies when used in antiretroviral therapy. This study sought to demonstrate the effect of sub-chronic efavirenz, compared to that of a known dependence-forming drug (cocaine), exposure on depressive-like and ambulatory behaviours and associated neurochemical and peripheral biomarkers.

METHODOLOGY

Male Sprague-Dawley rats (n=16/exposure) received intraperitoneal vehicle (control) or drug administration across an alternating sixteen-day dosing protocol. Control administration (saline/olive oil; 0.2 ml) occurred on odd-numbered and drug administration (efavirenz (5 mg.kg-1), cocaine (20 mg.kg-1)) on even-numbered days. Impact of drug exposure on depressive-like behaviour (forced swim test (FST)), ambulation (open field test (OFT)), regional brain serotonin and noradrenaline, and peripheral neuropeptide (oxytocin) expression were assessed vs controls. Statistical significance was determined by one-way or Kruskal-Wallis ANOVA, with significance deemed as p=0.05. Ethics approval: NWU-00291-17-A5.

RESULTS

Cocaine was significantly depressogenic compared to efavirenz (p=0.0335) and only moderately decreased swimming behaviour. Cocaine stimulated ambulation (p=0.0044) possibly resulting from significantly increased frontocortical (p=0.0039), striatal (p=0.0069), and hippocampal (p=0.0041) serotonin and hippocampal noradrenaline (p=0.0007) levels vs vehicle exposure and can therefore not be responsible for the observed behaviours in the FST. Furthermore, cocaine reduced plasma oxytocin levels (p=0007), a neuropeptide known to be involved in mood and substance abuse disorders. Efavirenz, however, failed to induce depressive-like behaviour vs vehicle exposed animals, but significantly increased swimming-duration vs vehicle (p=0.0348) and vs. cocaine-exposed animals (p=0.05 vs control), but rather to significantly elevated striatal serotonin (p=0.0023 vs control). Efavirenz significantly reduced plasma oxytocin expression (p=0.0030 vs control) to a similar extent as cocaine. No significant effects on struggling behaviour were observed for either drug.

CONCLUSION

This study demonstrates that, despite a lack of inducing depressive-like behaviours, efavirenz reduced plasma oxytocin in a manner comparable to cocaine. Thus, efavirenz is capable of modifying both central and peripheral biomarkers associated with drug abuse and depressive disorders. However, the precise mechanism mediating the aforementioned changes remains unclear and requires future investigation.

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ABSTRACT TITLE
The evolving Role of CRISPR in Psychiatry

BACKGROUND/AIM
In 2018 I summarised the recent history of CRISPR. In this talk, I will review the latest developments in CRISPR. Although CRISPR genome editing as a treatment tool has been placed on hold until its safety can be established, its role in diagnosis and the determination of disease mechanisms is moving to centre stage. Is CRISPR the tool we need to unravel the complexity of psychiatric diagnosis?

CONCLUSION
This is an up-to-date review of the status of CRISPR in medicine and psychiatry.

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ABSTRACT TITLE
Childhood trauma and treatment outcomes in first episode schizophrenia – a 2-year longitudinal study

BACKGROUND/AIM
Schizophrenia is an illness characterized by heterogeneous outcomes with many patients experiencing poor outcomes. While first-episode schizophrenia patients generally initially respond well to treatment, they often have poor outcomes over the long term. Poor outcomes may be ascribed to environmental factors. One such environmental risk factor is exposure to childhood trauma (CT), which in addition to increasing the risk of developing schizophrenia, is associated with lower remission rates and poorer treatment outcomes. In this study, we addressed the question of whether patients with a history of CT had a poorer response to antipsychotic treatment than those without such a history, when other potential confounds are taken into account.

METHODOLOGY
Our sample consisted of 78 patients diagnosed with a first episode of schizophrenia. We used linear mixed effect models for continuous repeated measures to study interactions between time and childhood trauma by group and controlled for age, gender and education. We used within analyses Fisher's Least Significant Difference post-hoc tests to compare the means between the high and low trauma group at baseline and at the end of the 2-year follow-up period.

RESULTS
This is the first study to document the association between CT and treatment outcome in schizophrenia in a setting in which treatment was standardized. The main findings were that, while psychopathology improvements were slower in the CT high patients, symptom severity levels were similar between the groups at 24 months. At the same time, while psychosocial functionality and quality of life response trajectories were similar between the groups, the high CT group improvements were less robust, with significantly poorer social and occupational functioning and quality of life persisting at month 24.

CONCLUSION
While we found only small differences between improvements in psychopathology, significant differences were demonstrated of psychosocial outcomes and self-rated quality of life. This would suggest that in the management in schizophrenia, exposure to childhood trauma should be routinely enquired after and interventions tailored accordingly. Interventions focusing on social and occupational functionality as well as self-esteem may be particularly important in those with a history of CT.

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ABSTRACT TITLE
Content validation of an instrument measuring primary health care workers' mental health literacy in Africa

BACKGROUND/AIM
Mental health literacy (MHL) consists of knowledge and beliefs about mental health issues. Lack of knowledge on mental health issues among primary health care workers has been recognized in Africa. Good MHL among health professionals aid the recognition, management and prevention of mental disorders, making the development of context specific instruments for measuring MHL crucial. The Mental Health Literacy Scale (MHLS) is a newly developed instrument measuring all attributes of MHL. The aim of this paper is to assess the content validity of MHLS in South Africa and Zambia.

METHODOLOGY
A heterogeneous expert panel method comprising of professional research experts (PE) and clinical experts (CE) was used to assess the content validity of MHLS in an African context. Expert panels were held for the both groups separately, for PEs in South Africa and CEs in Zambia between April and May 2018. PEs (n=11) and CEs (n=10) from primary health care were asked to assess the relevance of the 35

items of MHLS on a 4-point scale from 1 (not relevant) to 4 (very relevant). Content validity indexes for the item level (I-CVI) and scale level (S-CVI/Ave) were calculated.

RESULTS
Participants' educational qualifications varied from certificate to PhD -level. PEs were mental health professionals, who mostly had working experience of 15 years or more. CEs had no research experience; majority of them were registered nurses and midwifes, half of them having working experience up to five years. The I-CVIs for 35 items assessed by PEs ranked from 0.82 to 1.00, all of the items meeting the cutoff criteria ≥0.8 for relevance. I-CVIs ranked by the CEs varied from 0.1 to 1.00, ten of the items meeting the desired cutoff criteria. Scale level average (S-CVI/Ave, cutoff ≥0.9) for all 35 items rated by PEs was 0.95 and by CEs 0.63. Mean (S-CVI/Ave) for the both groups was 0.8, slightly below the desired cutoff 0.9.

CONCLUSION
MHLS has appropriate content validity in African context. However, ratings between the groups varied. Working experience and education influences the assessment of item relevance.

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ABSTRACT TITLE
Neuroscientific power of technology addiction on us

BACKGROUND/AIM
We're living in a techno-immersed world where mind-boggling technology innovations and associated applications are developed on a daily basis and at the speed of light worldwide. There are many innovative developments that are helping people in many different areas of their lives. Unfortunately, there are also certain developments that are putting our health and wellness at risk. Educational software programs provide engaging interactions while learning, but unfortunately also easily over stimulating people's brains, because of too many rewarding and pleasurable interactions and consequently over-secretion of dopamine. Dopamine is the main pleasure hormone in our brains and bodies. Dopamine also plays a significant role in technology addiction.

METHODOLOGY
The researcher facilitated a 3-hour workshop, focusing on living a well-balanced life with technology and social media to promote development, health and wellness. The workshop was attended by 40 first-year students at the beginning of their academic year in January 2019. A Technology Addiction Test

(TAT) was administered at the end of the workshop. It consists of 25 items on a 5-point Likert scale that measure mild, moderate and severe levels of internet addiction.

RESULTS
The researcher received 38 (95%) completed questionnaires. The data of the 25 items of each questionnaire were captured and analysed. The overall results are presented and categorised into the three levels of internet addiction. Based on these results, possible solutions to our real-life challenges with regards to neuroscientific development, health and wellness when spending too much time during our lifelong learning pathways with technology and social media, will be discussed.

CONCLUSION
We need to acknowledge the neuroscientific impact of technology addiction on our brains and bodies. We must acknowledge that our brains only mature fully at the age of 25 years and therefore we can't expect young children and people to manage these technologies effectively and wisely. It is reported that there is also an increase in the number of children with ADHD, Autism Spectrum Disorder (ASD) and Functional Disorder Syndrome (FDS). We must evaluate these trends and take precautionary steps to limit overall screen time for all children at homes and in classrooms to prevent technology addiction.

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ABSTRACT TITLE
Chaos and Crisis: Mothers with ADHD

BACKGROUND/AIM
The presentation will aim to present the challenges facing parents with ADHD, but specifically focusing on mothers. We know that female sufferers with ADHD are often misdiagnosed, especially at a young age. It does mean that women underperform and lead difficult lives professionally and personally. The subtype of ADHD might be very different in women, and present unique challenges in diagnosis and management. The diagnosis is often only made when adult life becomes more complex, such as marriage and children, or when comorbidities become evident. The presentation will explore parenting and professional challenges facing mothers, often also with children with ADHD. Some of the topics will be executive functioning, genetics, emotional regulation and time management, with some case studies.

METHODOLOGY
Literature search and original cases.

RESULTS
Not applicable as this is not original research.

CONCLUSION
The parenting difficulties of mothers with ADHD will be discussed, and hopefully some solutions suggested.

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ABSTRACT TITLE
Relationship between changes in metabolic syndrome constituent components over 12 months of treatment and cognitive performance in first-episode schizophrenia

BACKGROUND/AIM
Few studies have investigated the longitudinal effects of treatment-emergent metabolic syndrome changes on cognitive performance in first-episode psychosis. The aim of the present study was to determine the associations between changes in metabolic syndrome constituent component over 12 months of treatment and end-point cognitive performance in schizophrenia spectrum disorders.

METHODOLOGY
This single site-cohort study included 72 minimally treated or antipsychotic-naïve first-episode patients. Cognitive performance was evaluated using the MATRICS Consensus Cognitive Battery (MCCB). Our primary objective of interest was the relationship between metabolic syndrome constituent component changes over 12 months of treatment and end-poin cognitive performance. Secondary objectives included investigating whether this relationship was affected by age, sex, antipsychotic dose, treatment duration and substance use.

RESULTS
Weight gain predicted better overall cognition (p = 0.02) at end-point, adjusting for age, sex, substance use, baseline cognitive score and BMI, modal antipsychotic dose and treatment duration. Weight loss (p = 0.04) and substance use (p = 0.01) were both associated with poorer working memory performance at endpoint. Low baseline BMI showed differential effects on end-point working memory performance in substance users (unfavourable) compared to non-users (favourable) (p<0.05).

CONCLUSION
Weight gain over the course of antipsychotic treatment is associated with better overall cognitive performance and the working memory domain in first-episode schizophrenia spectrum disorder patients. In contrast, low baseline BMI may represent an unfavourable marker in substance users, who demonstrated weight loss compared to non-users.

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ABSTRACT TITLE
Prevalence and Correlates of Intimate Partner Violence among HIV Serodiscordant Couples in Durban South Africa

BACKGROUND
South Africa has high prevalence rates of intimate partner violence (IPV) and HIV which can be further exacerbated by HIV serodiscordancy in the couple dyad. Further exploration of the impact of the sidedness of the discordancy as well as mediating factors such as alcoholism and its impact on IPV is required. The aim of this paper is to investigate the prevalence and correlates of (IPV) in HIV serodiscordant couples in Durban South Africa.

METHODOLOGY
A cross-sectional analysis of data including participants' HIV status, reports of IPV, trauma and alcohol use was conducted on 30 serodiscordant couples in Durban South Africa at the point of enrolment into a pilot study of an HIV Risk Reduction Intervention for serodiscordant couples. The analysis examined gender differences in the intimate partner violence exposure, post-traumatic stress symptomatology and alcoholism risk outcomes using the statistical procedure for dependent small sample.

RESULTS
Of the 30 couples enrolled, 60% of the discordancy was in women. Over half of the participants, 53.3% were in the current relationship for more than 5 years. There were more reports of IPV and Posttraumatic Stress symptoms in women than men. The IPV dependence proportion between men and women was 0.29 and 0.89 respectively, with a significant difference (diff = -0.61, 95% CI: -0.82 to -0.39) p0.01). Similarly, median trauma symptoms scores between men and women was 22 (IQR = 40) and 44 (IQR = 28) with a significant difference based on Wilcoxon signed-rank test (p=0.03). There were no significant gender differences for alcoholism risk among all couples.

CONCLUSION
The findings demonstrated high levels of IPV and Posttraumatic stress symptoms in HIV serodiscordant couples, especially in cases where the woman was HIV positive. HIV intervention programs should address domestic violence among heterosexual couples. Key words: HIV, IPV, serodiscordant couples, PTSD, alcohol use.

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ABSTRACT TITLE
A Comparative Survey on knowledge, attitudes, practices and beliefs about HIV and AIDS among patients with chronic mental and medical illnesses in Durban, Kwa-Zulu Natal

BACKGROUND/AIM
Poor knowledge about the Human Immunodeficiency Virus (HIV) remains a challenge in the post highly active antiretroviral treatment era, with a majority of the population acquiring information from different sources, such as the media, family, friends and small proportion of information from the health care facilities. Mental illness and substance use disorders influence high-risk sexual behaviours. Poor knowledge about the virus may render the mentally ill less receptive to HIV prevention information. The mentally ill population is more at risk of HIV infection than the general medical population, and the dissemination of information on HIV should be prioritized in this vulnerable group. The aim, to assess knowledge, attitudes, beliefs and practices (KABP) relating to HIV infection and Acquired immunodeficiency syndrome (AIDS) among patients with mental and medical illnesses.

METHODOLOGY
A cross–sectional structured questionnaire survey of patients with psychiatric disorders and medical disorders attending two general hospitals in Durban, which offered both psychiatric and medical outpatient services, was conducted.

RESULTS
110 participants with mental illness and 110 participants with a medical illness were interviewed. Participants were predominantly female (69.5%), single and unemployed. The diagnosis of mental illness (p=0.02) was associated with poorer general knowledge of HIV but not for knowledge on HIV transmission or prevention. Educational level was significantly associated with poorer general knowledge of HIV (p=0.01), HIV transmission KBAF (p=0.02) and HIV prevention KBAF (p=0.01).

CONCLUSION
Patients with mental illness displayed poorer KAPF regarding HIV than patients with medical illnesses suggesting need to upscale HIV heath education in psychiatric settings

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ABSTRACT TITLE
Triple comorbidity of severe mental illness, HIV infection & alcohol abuse in a female population at a community psychiatric clinic in Cape Town: Prevalence and correlates

BACKGROUND/AIM
The main aim of this study was to investigate the prevalence of a triple co-morbidity of SMI, HIV infection and hazardous alcohol use in a female population at a community psychiatric clinic in Cape Town South Africa; and the impact of this triple comorbidity on medication adherence. Furthermore, we set out to identify demographic and clinical variables that are predictors of poor adherence to both psychotropic medication and ART where applicable.

METHODOLOGY
We conducted a cross-sectional study of female patients presenting to Gugulethu psychiatric clinic over a ten-month period. A descriptive analysis of the demographic and predictor variables was undertaken to explore the prevalence of concurrent HIV infection and hazardous alcohol use in out-patients with SMI; as well as to investigate whether co-morbidity is associated with poor levels of adherence to psychotropic medication, as well as antiretroviral treatment (ART) in HIV positive patients.

RESULTS
We interviewed 127 patients, of whom 55 were HIV positive (43.3%). The overall prevalence of a triple comorbidity in this population was 7.9%. Only 20% within this triple comorbidity group were adherent to their psychotropic medication. Out of the 10 participants with a triple comorbidity, only five were on ART. Of these 5 participants, only two were adherent. Individuals with hazardous alcohol use were less adherent to psychotropic medication compared to those without. The seven respondents in the dual diagnosis group (SMI and hazardous alcohol use) had the lowest overall psychotropic adherence levels compared to the other subgroups (0%). Furthermore, concurrent hazardous alcohol use predicted poorer levels of compliance to ART for those with HIV infection.

CONCLUSION
The presence of a triple diagnosis was not found to be a predictor of poorer medication adherence, compared to having one or two diagnoses. Nevertheless, there was evidence that concurrent hazardous drinking in SMI patients predicted poor compliance to both psychotropic and ART treatment regimens (for those living with HIV). These patients should be supported in future interventions to improve medication adherence and reduce hazardous drinking.

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ABSTRACT TITLE

Utility and validity of a smart phone application for the assessment of cognitive function among patients with a first episode of psychosis in Uganda

BACKGROUND/AIM

Cognitive assessments of patients with psychotic disorders are not usually performed in low- and middle-income countries due to human resource limitations. Cognitive assessments delivered via smart phone applications may allow assessment of cognitive function in low resource settings, few have been validated and none are in common use. We aimed to validate the Neuroscreen, a smart phone application for use in patients with a first episode of psychosis in Uganda.

METHODOLOGY

250 patients with first episode psychosis admitted at the National psychiatric teaching and referral hospital in Uganda were included in the study. The psychosis diagnosis was confirmed with the MINI, patients followed from admission until psychotic symptoms resolved, and cognitive assessments then performed. The Neuroscreen is a collection of cognitive assessments delivered via a smart phone application. It was administered by diploma level psychiatric clinical officers. The MATRICS consensus cognitive battery (MCCB) that is the gold standard for assessment of cognitive function in patients with psychosis, was administered by clinical psychologists. Both the Neuroscreen and MCCB were given on the same day, with breaks in between each assessment. ROC analysis was undertaken to determine the sensitivity and specificity of the Neuroscreen.

RESULTS

In preliminary results, the average time for both administration and scoring of a cognitive assessment with the Neuroscreen was 30.4 mins. The average time for administering and scoring the MCCB was 141.0 mins. There was a significant positive association between many tests on both tools. For example there was a positive association between the visual discrimination task on the Neuroscreen and the symbol coding task on the MCCB, (rs(89)=0.6203, p=0.0047).

CONCLUSION

These preliminary results suggest that the Neuroscreen may have utility in assessing cognitive function in patients with a first episode of psychosis. Additional validation results are pending.

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ABSTRACT TITLE

Burnout, Anxiety and Depression in South African Doctors Working in Kwazulu-Natal Training Hospitals: An eThekwini Perspective.

BACKGROUND

The dehumanisation of medicine not only applies to the patient population, but to medical doctors (MD) as well. This commonly manifests itself as burnout, anxiety and depression which is associated with impaired functioning personally and professionally. Establishing the extent of the problem as well as potential modifiable factors may lay the foundation for public health interventions to prevent or attenuate negative outcomes.

Objective: To determine the prevalence of burnout, anxiety and depression and their associations with practitioner and work-related factors among MD employed at state hospitals in the eThekwini municipality of KwaZulu-Natal.

METHODOLOGY

A cross sectional survey was conducted among MD at 5 training hospitals using a sociodemographic questionnaire, the Maslach Burnout Inventory – Human Services Survey (MBI-HSS), the Generalised Anxiety Disorder questionnaire 7 (GAD 7), and the Patient Health Questionnaire 9 (PHQ 9).

RESULTS

Eighty-eight (59%) of the 150 participants reported burnout, as indicated by high scores on the emotional exhaustion or depersonalisation subscales of the MBI-HSS. Thirty (20%) participants reported anxiety and 32 (21%) reported depressive symptoms. Burnout was associated with anxiety (p<0.01) and depression (p<0.01). There were also significant associations between burnout and junior occupational rank (p=0.02); lack of support by clinical supervisor (p<0.01); lack of hospital resources (p<0.01); and negative impact of work on personal life (p<0.01). In addition, females had an increased risk of screening positive for depression (p=0.02).

CONCLUSION

Burnout, anxiety and depression in MD are highly prevalent in resource-constrained KwaZulu-Natal training hospitals and possibly have complex bidirectional associations. Factors such as gender, occupational rank, support by clinical supervisor, hospital resources and impact of work on personal life appear to play an important role in its development. Programs to support MD in resource restrained settings need to be urgently considered.

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ABSTRACT TITLE
Searching for the elusive Pathobiological causes of Catatonia

BACKGROUND
The pathobiological causes, the shared cellular and molecular pathways in catatonia and in catatonic presentation in neuropsychiatric disorders are yet to be determined. In this presentation, a hypothesis is presented to postulate the underlying cause of catatonia and its many clinical presentations and to explain its relationship to the neuroleptic malignant syndrome and the serotonin syndrome. A second hypothesis speculates the causative gene for periodic catatonia on 15q15. Future precision psychiatry will need more such accurate pathophysiologically defined psychiatric diagnoses to accelerate the discovery of specific molecular-targeted medications to improve therapeutic outcomes

METHODOLOGY
The two hypotheses have been deduced from the latest scientific research findings and clinical observations of patients with genetic disorders, behavioural phenotypes and other family members suffering mental disorders.

RESULTS
The first hypothesis postulates that catatonia and the heterogeneity of catatonic signs and symptoms involve nucleolar dysfunction arising from abnormalities of the brain-specific, non-coding micro-RNA, SNORD115 genes (either duplications or deletions) which result in pathobiological dysfunction of various combinations in the downstream pathways (possibly along with other genes in these shared pathways). SNORD115 controls five genes CRHR1, PBRM1, TAF1, DPM2, and RALGPS1 as well as the alternative splicing of serotonin 2C receptor. The second hypothesis postulates that periodic catatonia (PC) on 15q15 involves abnormalities of vacuolar protein sorting 39 (VPS39), a proven de novo schizophrenic gene in this chromosomal locus and part of the HOPS complex.

CONCLUSION/DISCUSSION
SNORD115 abnormalities with varying downstream multigene involvement would account for catatonia as a nucleolar disorder across the life span within some subtypes of autism spectrum disorders, schizophrenia, bipolar and major depressive disorder, psychosis, genetic disorders, and in immune disorders such as anti-N-methyl-D-aspartate receptor (NMDAR) antibody encephalitis as well as the susceptibility to the neuroleptic malignant syndrome (NMS) if environmentally triggered. Furthermore, SNORD115 genes may underlie a genetic vulnerability when environmental triggers result in excess serotonin producing the serotonin syndrome, a condition similar to NMS in which catatonia may occur. Dysfunction of SNORD115-PBRM1 connecting with SMARCA2 as well as other proven schizophrenia-associated genes might explain why traditionally catatonia has been classified with schizophrenia. SNORD115-TAF1 and SNORD-DPM2 dysfunction introduce possible clues to the parkinsonism and increased creatinine phosphokinase in NMS, while abnormalities of SNORD115-RALGPS1 suggest links to both anti-NMDAR encephalitis and the proven predisposing catatonic SHANK3 gene. These will impact the autophagic and endocytic pathways, thereby lowering lysosomal degradation. VPS39 mutations may be considered also to disrupt lysosome-mitochondria tethering and transport of lipids and calcium through membrane contact sites (MCSs). To account for the periodicity in PC it is speculated that the mammalian equivalent of the vacuole and mitochondria patch (vCLAMP) would be altered by VPS39 mutations and subsequently followed by the mammalian equivalent of endoplasmic reticulum mitochondria encounter structure (ERMES) restoring mitochondrial homeostasis.

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ABSTRACT TITLE
The role of Oxytocin on a Sexual Defeat Rat Model

BACKGROUND/AIM
South Africa has been named the "rape capital of the world" with 110 rape cases reported daily. Sexual violence against women is a major international public health problem and a violation of women's human rights. However, there is a dearth of viable data on factors perpetuating sexual violence and whether aggressive behaviour or factors leading to aggressive behaviour such as social isolation play a role in perpetuating sexual violence. The hypothalamic pituitary adrenal axis plays a pivotal role in the stress response by regulating both corticosterone and oxytocin. The hypothalamic pituitary adrenal axis has been shown to be susceptible to dysregulation by social isolation. Furthermore, there is a dearth of animal models designed to mimic sexual violence in a controlled laboratory environment. Therefore, the aim of this study was to create a model of sexual defeat using juvenile Sprague-Dawley rats (SD).

METHODOLOGY

Virgin male SD rats were exposed to either group housing or social isolation concurrently for seven days. After this the resident-intruder test was used to assess aggressive behaviour. These males were then exposed to females in oestrus, and upon the second intromission the female in oestrus was removed and replaced with a female not in oestrus. This model was repeated for a total of four days after which the resident-intruder paradigm was repeated. After the resident-intruder paradigm, the social dominance tube test was used to assess social deficits in the male rats, while the forced swim test was performed on the females.

RESULTS

Our findings show that social isolation resulted in increased sexual aggression towards females which also culminated increased aggression towards male intruders and social deficits. These findings were confirmed by high oxytocin levels observed in the group housed males in comparison to the isolated sexual defeating males. Female rats showed depressive-like behaviour and increased systemic corticosterone levels.

CONCLUSION

In conclusion, this model will allow for the study of sexual aggression in both man and woman in a controlled environment, with a focus on physiological changes which may occur in perpetrators.

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ABSTRACT TITLE

Strengthening the Brain Reward System via physical activity to combat addictive behaviours

BACKGROUND/AIM

Addiction has been characterized as a 3-stage cycle
1) positive stage of compulsive drug seeking,
2) loss of control over drug intake, and
3) a negative withdrawal stage that engages the brain stress system.

To lessen the likelihood of addictive behaviours taking root in the increasingly sedentary modern lifestyles, there is a great need to establish effective preventative measures. We identified two components of the Brain Reward System (BRS) that can be strengthening by physical activity (PA) to combat development of addictive behaviours:
1) Willingness to work to obtain a set goal, and
2) locomotor muscle activation via central pattern generators (CPGs).

METHODOLOGY

1) We measured the extra amount of work (completed during 13 min of hand-gripping intervals at 70% MVC) that 29 participants (29.7 ± 9.7 years, BMI: 26.1 ± 6.8, moderate to vigorous/week PA 569 ± 706 min) completed with methylphenidate (MPH) vs. without MPH ingestion.
2) We examined the relationship between heart rate variability (HRV - measure of stress) and CPG output – specifically by measuring joint angles between the head, spine, pelvis and feet - during a mock boxing stressor, both pre and post 10 sessions of Tai Chi training.

RESULTS

1) The less habitual PA an individual engaged in the greater their improvement in handgrip force output with MPH. ($r = -0.4$ $p < 0.05$)
2) Before Tai Chi training there was a significant positive correlation between HRV (stress marker) and back-footed CPG stance (i.e. wider head, spine, pelvis and feet angles) during boxing ($r = 0.87$, $p < 0.02$) . After training HRV was significantly negatively correlated to front-footed CPG stance (i.e. narrower head, spine, pelvis and feet angles) during boxing ($r = -0.87$, $p < 0.005$).

CONCLUSION

The level of physical PA people habitual partake in is associated with DA neurotransmission that impacts willingness to work to obtain a set goal. An effective way to strengthen locomotor CPGs (that co-ordinates the motor output to obtain a set goal) is via 'movement from the spine' such as during walking, jogging, pedaling, swimming, paddling, Tai Chi, Qigong, etc.

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ABSTRACT TITLE

Depressive symptoms and viral suppression among a cohort of HIV-infected adult men and women initiating ART in Dar-es-Salaam, Tanzania

BACKGROUND/AIM

There is a growing body of evidence that depression is linked to poor health outcomes among HIV-infected adults on antiretroviral therapy (ART). However, the relationship between depression and viral suppression remains unclear, particularly in resource-limited settings.

METHODOLOGY

We conducted a prospective cohort study of 3,996 adult men and women initiating ART in Dar-es-Salaam, Tanzania. Depressive symptoms were assessed using the Hopkins Symptoms Checklist at baseline, six months, and twelve months post-ART initiation. Log binomial models were used to assess the association between depression at ART initiation and six months of ART with the risk of unsuppressed viral load (greater than 400 copies/μl) at 6 months.

RESULTS

The prevalence of symptoms consistent with depression at ART initiation was 49.8% among 2,732 women and 45.4% among 1,264 men. Prevalence among men decreased to 23.7% at six months and 13.9% at twelve months post-initiation. Among women it decreased to 29.1% at six months and 20.8% at twelve months post-initiation. After multivariate adjustment, women with depression at six months of ART had 1.56 times (95% CI: 1.10, 2.21; p=0.01) the prevalence of concurrent unsuppressed viral load. Men with the top tertile of depression score at six months had 1.69 times the prevalence of an unsuppressed viral load (RR: 1.59; 95% CI: 1.04, 2.44; p=0.03).

CONCLUSION

These findings suggest that interventions to reduce depression among adults initiating ART would not only improve their own health but, importantly, also reduce their risk of transmitting HIV.

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ABSTRACT TITLE

Rapid evidence synthesis and development of a treatment algorithm for Bipolar Disorder

BACKGROUND

The medical management of Bipolar Disorder (BD) is complex and guideline heterogeneity with poor guideline adherence are well documented. Polypharmacy has been documented locally and internationally, commonly in relation to depressive episodes, but also related to acute phase medicines being continued as maintenance. Treatment may be complicated by a high prevalence of medical comorbidity, in turn worsened by poorly controlled BD. The goal of care should be euthymia with optimal biopsychosocial functioning for the individual. The aim of this review was to recommend the best practice for medical treatment of BD and draft an evidence-based, clinically relevant, algorithm for South Africa.

METHODOLOGY

To obtain recent evidence, the PubMed and Cochrane databases were searched for systematic reviews on the treatment of BD published in English in the past five years. Search terms were (bipolar disorder OR bipolar depression OR mania) AND (treatment OR medication OR lithium OR antipsychotics OR anticonvulsants OR antidepressants). Of the 338 publications, 11 were used for overall decision-making. An additional meta-analysis was added from reference list searching. Further searches were conducted to update the systematic reviews with any studies published in the past two years and to answer specific questions which arose during the evidence synthesis.

RESULTS

Because of the general poor quality of randomized controlled trials in BD, findings on acute and maintenance treatment from comparative effectiveness reviews were corroborated with results of systematic reviews on specific treatments, observational studies, and expert opinion. After assessment of the evidence, medicines were selected through consensus agreement of the Adult Hospital Standard Treatment Guidelines Committee and algorithms drafted for 1st, 2nd, and 3rd line treatment of predominantly manic and depressive courses of illness. Final recommendations will follow review and ratification by the National Essential Medicines List Committee, external comment by clinical stakeholders, and a re-iterative process on receipt of these comments. These will then be incorporated in the National Essential Medicines List and Standard Treatment Guidelines.

CONCLUSION

Treatment algorithms for BD, updated using recent evidence from multiple sources and a transparent, consultative process, will be available for presentation in September 2019 and published for implementation by early 2020.

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ABSTRACT TITLE

Experience from a Ketamine Clinic of more than 50 patients treated for resistant depression

BACKGROUND/AIM

Over the past decade there has been an increasing interest in the use of ketamine in sub- anaesthetic

doses for the treatment of both unipolar and bipolar depression. Ketamine has a particularly rapid effect and appears to be modulated by its action as a non- competitive NMDA antagonist and neuroplastic effects. This has been confirmed by a number of randomised controlled trials. This presentation will discuss the experience gained from treating more than 50 patients at an infusion clinic. The treatment regime and practical arrangements will be described as well as several case reports.

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ABSTRACT TITLE
Cannabis use and hippocampal subfield volumes in males with first episode schizophrenia and healthy controls

BACKGROUND
Both Schizophrenia and cannabis use are associated with structural brain changes. The hippocampus is a region of particular interest due to its role in memory and select cognitive functions, impairment of which is a core feature of schizophrenia and has also been observed in substance abuse. This study aimed to explore the effects of cannabis use on hippocampal subfield volumes in male first-episode schizophrenia spectrum disorder patients and matched controls.

METHODOLOGY
This cross-sectional, case-control study included 63 patients and 58 controls scanned on 3T MRI scanners, with hippocampal segmentation performed using recently validated Free surfer v6.0 software. Urine toxicology screening was done on the day of the MRI scan. We used multivariate analysis of covariance (MANCOVA) with age and scan sequence as covariates, with subsequent analysis of variance (ANOVA) to test the effects of diagnosis and cannabis use status on individual hippocampal subfields.

RESULTS
We found a diagnosis by cannabis use interaction effect in the subiculum (F=7,832; p=0,006), with smaller volumes observed in the cannabis non-using patients than the cannabis using patients, and smaller volumes in the cannabis using controls than the cannabis non-using controls.

CONCLUSION
The larger subiculum volume in cannabis using patients compared to cannabis non-using patients was unexpected and raises important questions regarding the pathophysiology of schizophrenia and the role of cannabis use therein.

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ABSTRACT TITLE
The management of ADHD during pregnancy

BACKGROUND/AIM
Attention-deficit/hyperactivity disorder (ADHD) medications are used by increasing numbers of reproductive-age women. Untreated ADHD increases the risk for the development of comorbid mental health disorders. However, the safety of psychopharmacological treatment of ADHD during pregnancy has not been well described. This talk will evaluate available literature and also unpublished studies requested from pharmaceutical companies and propose the safest options in terms of pharmacological and non-management of ADHD during pregnancy.

METHODOLOGY
A Pubmed search was conducted for all published articles (systematic reviews, trials, and case reports) for the management of ADHD during pregnancy. Pharmaceutical companies were contacted for all available unpublished data.

RESULTS
Findings will be presented during this presentation and to propose a course of action for the management of ADHD during pregnancy.

CONCLUSION
The risks and benefits of treatment versus non-treatment of ADHD for both mother and fetus needs to be carefully evaluated for each individual patient.

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ABSTRACT TITLE
The prospects for research in biological psychiatry in Nigeria

BACKGROUND/AIM
Biological psychiatry deals with abnormalities of brain and genetic functioning and how they interact with environmental factors to underlie the genesis, manifestation, and response to treatment of mental disorders. These issues have not featured

significantly in the Nigerian psychiatric scene. Hence, we are witnessing a withering away of the biological foundations of psychiatry as a clinical science in Nigeria, and a re- definition of our discipline as a social science. The objectives of this write-up are, to highlight the reasons for this deficiency, and suggest how research in biological psychiatry can flourish as a career choice.

As a research agenda, three levels of studies are feasible: (i) simple studies that can be carried out with commonly available tests; (ii) relatively deeper studies that need more difficult to obtain equipment; and (iii) more sophisticated studies. In addition, methodologists should band together in subspecialty associations, and promote the ideals of scientific rigor and contribution to the evidence base pyramid. The political leadership should provide the necessary infrastructure (electricity, pipe borne water) and stabilize the labor market, while the health and higher education administrators should effect the institutional training accreditation requirements, and employ staff that have the aptitude, zeal and skill for research.

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ABSTRACT TITLE

Can enhanced social relationships mitigate metabolic disarray in PTSD?

BACKGROUND/AIM

A growing body of evidence has suggested that enhanced social relationships or support can affect incidence and severity of PTSD; moreover, a separate, burgeoning body of evidence has suggested that social support affects numerous physical health outcomes including mortality, cardiovascular, and cerebrovascular disease.

We aimed to explore the potential effect of social support on physical health, particularly metabolic syndrome (MetS), in individuals with PTSD.

METHODOLOGY

Two hundred and ninety-three adults from the Western Cape Province of South Africa were included in the analysis. All were diagnosed with PTSD on the Clinician-Administered PTSD Scale for DSM-5 (mean score: 53.7 ± 9.4). Social support was assessed with the Multidimensional Scale of Perceived Social Support (MSPSS) and MetS risk was based on JIS criteria. Social support was regressed on MetS using ordinal regression, with age, and PTSD severity included as covariates.

RESULTS

The sample was mostly female (74.4%) and had an average age of 41.8 ± 11.7 years. Participants presented with an average of 1.8 ± 1.4 MetS symptoms, with 30.4% meeting criteria for MetS. Overall, participants reported a moderate amount of perceived social support (4.4 ± 1.6). The regression model was significant $\chi^2(3) = 40.35$, p = 0.000 and accounted for 13.4% (adjusted R2) of the variance in MetS risk factors. When the other variables were accounted for, age (p = 0.000) and perceived social support were significant predictors of MetS (p = 0.046).

CONCLUSION

Similar to findings in other populations, older individuals were likely to have more symptoms of MetS. Further, these results suggest that social support plays a significant role in mitigating metabolic disease in persons with PTSD in this sample. Further exploration of this is warranted, particularly the potential role played by hypothalamic pituitary axis and downstream inflammatory cascades.

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ABSTRACT TITLE

Epigenome-wide association study on PTSD diagnosis and metabolic syndrome in a mixed ancestry South African population

BACKGROUND/AIM

Posttraumatic stress disorder (PTSD) is a disabling psychiatric disorder and shares overlapping pathogenic mechanism with metabolic syndrome (MetS). Epigenetic changes in response to trauma may provide insight into underpinning biological mechanisms involved in PTSD and metabolic outcome. The aim of this study was to identify genome-wide alterations in DNA methylation associated with PTSD and MetS.

METHODOLOGY

Blood samples were collected from PTSD cases (N = 61) and controls (N = 59) with/without MetS, and DNA methylation was interrogated using the Illumina Infinium EPIC BeadChip. The association between PTSD diagnosis and DNA methylation was assessed for each CpG site using generalized linear models that adjusted for MetS effect, age, sex, smoking, childhood trauma, and cellular heterogeneity. Gene ontology (GO) and pathway analyses were conducted using Enrichr, and Bonferroni correction was applied to adjust for multiple testing.

RESULTS

Two hypomethylated CpG sites spanning SHC1 and PRKCSH genes were associated with PTSD diagnosis (p 1E-7, FDR 0.05), independent of MetS effect, age, sex,

and cellular heterogeneity. Controlling for childhood trauma and smoking did not attenuate these results. The top 100 differentially methylated CpG sites were located in genes involved in phophatidycholine transporter activity (GO:0008525; p 1.2E–3) and neurotrophin signalling pathway (p = 0.03).

CONCLUSION
Our data reveal aberrant DNA methylation in the periphery in PTSD and suggests phospholipid metabolism associated with neurotransmission as a potential biological pathway involved in trauma-related pathophysiology.

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ABSTRACT TITLE
Pregabalin prescribing in private healthcare settings in South Africa with specific focus on dosages

BACKGROUND / AIM
Pregabalin (3-isobutyl gamma-aminobutyric acid (GABA)) is a GABA analogue with antiepileptic, analgesic and anxiolytic activity. Pregabalin is registered in South Africa for post-herpetic neuralgia and painful diabetic polyneuropathy in adults. It is increasingly prescribed for neuropathic pain, generalised anxiety disorder, epilepsy, migraine and fibromyalgia. The primary aim of the study was to analyse the prescribing patterns and cost of pregabalin with the focus on dosages prescribed.

METHODOLOGY
A retrospective drug utilisation study was conducted on a South African medical insurance administrator database for 2018. The database contained 4 191 138 records for medicine, medical devices and procedures. All products in ATC group N03AX16 were analysed. No ICD-10 codes were available.

RESULTS
A total of 726 patients (54.41% males) were prescribed 1 888 pregabalin products during 2018 at a total amount claimed of R400 183.89. The average age of patients was 50.38 (SD=13.59) years. Most patients (72.45%) were between 30 and 59 years of age. Two trade name products were prescribed (the originator product and one generic), and both were available in capsules in strengths of 25 mg, 75 mg and 150 mg. The originator product accounted for 72.83% of prescription volume. The 75 mg capsules of the originator product was prescribed the most (44.92% of prescriptions), followed by the 25 mg capsule of the originator. The average Prescribed Daily Dose (PDD) was 73.44 mg. The average amount claimed per pregabalin prescription was R211.96 (SD=R196.85). Most prescriptions were dispensed by

pharmacies (57.10%), followed by hospitals (32.10%). Smaller quantities were prescribed in hospitals. If only pharmacy prescriptions were considered, the average PDD of pregabalin to the 464 patients was 89.36 (SD= 67.38) mg. Dosages varied from 4.17 mg to 310.71 mg. The most popular specific PDD was 75 mg, followed by 150 mg. A third (31.08%) of PDDs were between 75 mg and 100 mg.

CONCLUSION
Pregabalin is used for different indications, also often off-label. Similarly, a wide variation of dosages was prescribed. In pharmacies, a PDD of 75 mg was the most popular dose. The importance of accurate diagnoses codes in electronic databases to enable dosage linking cannot be overemphasised.

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ABSTRACT TITLE
Hair cortisol and the interaction between PTSD and metabolic syndrome

BACKGROUND / AIM
Individuals with posttraumatic stress disorder (PTSD) demonstrate an increased prevalence of metabolic syndrome (MetS). Both PTSD and MetS are associated with alterations in hypothalamic pituitary adrenal (HPA) axis function. Hair cortisol concentration (HCC) provides insight into longer-term HPA axis function, thus providing a possible biomarker of chronic stress, PTSD and the comorbidity of PTSD and MetS. In a case-control study evaluating factors that contribute to increased risk for cardiovascular disease risk (as defined by the MetS) in neuropsychiatric disorders, we aimed to determine whether HCC was associated with PTSD diagnostic status and severity and with PTSD and comorbid MetS.

METHODOLOGY
We utilised the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5) to determine PTSD diagnostic status and severity scores in 219 females of mixed ancestry aged between 20 and 79 years (M = 44.0, SD = 13.3). Hair samples, representing a three-month retrospective window of cortisol levels were obtained and analysed utilizing liquid chromatography tandem mass spectrometry. We constructed multivariate regression models to evaluate whether HCC (reciprocal square root transformed to achieve normality) were associated with PTSD diagnostic status, PTSD severity and MetS comorbidity, controlling for socio-demographic, clinical, hair related and trauma related factors.

RESULTS
The prevalence of MetS was 30.3% in PTSD patients (n = 110) and 40.4% in trauma-exposed controls (n

= 109). In both unadjusted (OR = 4.7, 95% CI = 1.8 - 12.2) and final adjusted (OR = 4.8, 95% CI = 1.1 - 13.9) models, HCC was significantly higher in PTSD patients than in trauma-exposed controls. Similarly in both unadjusted (β = 14.4, 95% CI = 7.0 - 21.8) and final adjusted (β = 9.2, 95% CI = 2.2 - 16.1) models, HCC was associated with PTSD severity. HCC was not significantly associated with MetS nor with PTSD and MetS comorbidity.

CONCLUSION
We demonstrate increased long-term cortisol levels in PTSD patients, with a clear dose-response relationship. This study provides evidence of a chronically dysregulated neuroendocrine mediated stress response in PTSD. This dysregulated stress response does, however, not appear to be a factor associated with the comorbidity of PTSD and MetS in this sample.

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ABSTRACT TITLE
Association between trauma exposure mood trajectories in patients with mood disorders

BACKGROUND
Trauma exposure can impact on mood disorder development and phenotypic presentation. Although the influence of trauma exposure on cross-sectional mood data is well known, there is a lack of information on the influence of trauma on weekly mood trajectories. We investigated the association between childhood and lifetime trauma exposure, and mood trajectories over 16 weeks; the associations between trauma exposure severity and mood symptom severity across time; and the influence of trauma on the fluctuations in mood symptom severity over 16 weeks.

METHODOLOGY
Method: Mood disorder patients (N = 107; female = 81; mean age = 37.04 years, SD = 10.862 years) were assessed for trauma exposure using the Childhood Trauma Questionnaire (CTQ) and Life Events Checklist (LEC). They completed weekly telephonic mood assessments using the Quick Inventory of Depressive Symptomatology (QIDS) and Altman Self-Rating Mania scale (ASRM) over a 16-week period. Associations between trauma exposure, severity of mood symptoms, and mood trajectories, were analysed using Pearson's correlation, LS Mean scores, f-statistics, and RMANOVA.

RESULTS
Childhood trauma was persistently associated, albeit with fluctuating strength, with depressive symptomatology, with emotional abuse showing the most persistent association over time.

Childhood sexual abuse was minimally associated with depressive symptomatology. The severity of childhood trauma exposure was positively correlated with the average severity of depressive symptoms. With the exception of total LEC scores, no association between trauma exposure and mania symptoms were found.

CONCLUSION
The findings indicate the need of careful assessment of childhood trauma in mood disorder patients who report depression symptoms, with a focus on emotional abuse. A history of childhood trauma should be considered as a treatment target in the clinical monitoring process, in order to mitigate its influence on the severity of depression symptoms. Further research is needed to understand which factors might contribute to temporal changes in the association between childhood trauma and depressive symptoms. Nonetheless, it is encouraging that high, compared to low, trauma exposure did not result in a more compromised outcome in terms of improvement across 16 weeks, bringing hope to mood disorder patients in a country riddled with trauma.

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ABSTRACT TITLE
Dopaminergic and Serotonergic Modulation of Social Reward Appraisal in Zebrafish (Danio rerio)

BACKGROUND/AIM
Cognitive rigidity and deficits in reward and punishment feedback processing are often observed in obsessive-compulsive disorder (OCD). This work aimed to establish a model of OCD in zebrafish (Zf) by manipulating social reward appraisal in a cue-contingency learning task as subject to chronic dopaminergic (apomorphine; APO) and serotonergic (escitalopram; ESC) intervention.

METHODOLOGY
Seven groups of fish (12 weeks old; n = 6/group) were either not treated (control) or treated for 24 days (days 1 – 24; 1h/day) with APO (50/100ug/day), ESC (500/1000ug/day) or APO and ESC (A100/E500 or A100/E1000ug/day) (ZebTEC). Testing comprised three phases from day 15. Phase 1 involved the acquisition of a cued social reward contingency in one arm of a T-maze. In Phase 2, the

reward-predicting value of the cue was diminished by presenting the red cue card alone. In Phase 3, the reward was reintroduced in the non-cued arm; however, the red cue card was still presented in the alternative arm.

RESULTS
Phase 1: Control Zf displayed a natural aversion for the red cue card, remaining insensitive to the presence of social conspecifics. This was reversed by all treatment groups which facilitated reward appraisal. Phase 2: ESC-treated Zf made more entries into the non-cued arm; however, 1000ug ESC-treated Zf still spent more time in the cued arm. 50ug APO-treated Zf persisted to enter the cued arm, while 100ug APO-treated Zf remained uncertain in terms of arm-choice. In the absence of reward-presentation, neither ESC concentration was sufficient to counter APO-induced behaviour. Phase 3: 100ug APO—alone and in combination with ESC 500ug—treated Zf continued to demonstrate behavioural inflexibility. All other treated groups relearned the newly paired reward-contingency.

CONCLUSION
Phase 1: Control Zf displayed a natural aversion for the red cue card, remaining insensitive to the presence of social conspecifics. This was reversed by all treatment groups which facilitated reward appraisal. Phase 2: ESC-treated Zf made more entries into the non-cued arm; however, 1000ug ESC-treated Zf still spent more time in the cued arm. 50ug APO-treated Zf persisted to enter the cued arm, while 100ug APO-treated Zf remained uncertain in terms of arm-choice. In the absence of reward-presentation, neither ESC concentration was sufficient to counter APO-induced behaviour. Phase 3: 100ug APO—alone and in combination with ESC 500ug—treated Zf continued to demonstrate behavioural inflexibility. All other treated groups relearned the newly paired reward-contingency.

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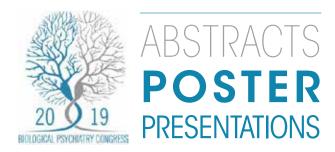Psychiatrist in private practice[1]

ABSTRACT TITLE
ADHD in females: a view of the symptomatology across their lifespan

BACKGROUND/AIM
ADHD in females presents as less "loud", impulsive and hyperactive than in males. The prevalence of ADHD in children in community samples is 3:1 in favour of boys, and girls are more likely to be the Inattentive Type, introverted, daydreaming, struggling to finish a task or organise their lives and isolated. Girls' ADHD is more likely to be overlooked until they reach adolescence and young adulthood when they begin to show lack of self-regulation, self-management and social inappropriateness which affects their self-esteem and contributes to co-morbid depression,

anxiety, eating disorders and substance abuse. Girls with ADHD experience greater peer rejection than boys. Many women are first diagnosed with ADHD in adulthood when expectations of the woman to be the organiser, planner, primary parent, manage the home and work become overwhelming. Adult women may also have to face the reality of their academic or occupational underachievement resulting from many years of unrecognised ADHD. They are likely then to present with co-morbidities of depression, anxiety, poor self-esteem or sleep disorders. Change can be effected by psychiatric and psychosocial interventions at all stages of ADHD through the female lifespan. Increasing awareness of screening for ADHD in educators, primary care medical practitioners, parents, psychiatrists and psychologists could change the life course for many girls, adolescent females and adult women ■

ABSTRACTS
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ABSTRACT TITLE
Structural brain differences in adolescents with anxiety proneness and childhood trauma.

BACKGROUND/AIM
Studies have shown that anxiety disorders are among the most prevalent category of psychiatric disorders among adolescents and they are more prone to suffer brain volumetric reductions compared to controls. Individuals with childhood trauma are at greater risk of developing anxiety disorders. The aim of this study was to compare brain structure among adolescents with childhood trauma and anxiety proneness. Our hypothesis was that adolescents with high levels of childhood trauma and high level of anxiety will demonstrate significantly more pronounced volumetric reductions compared to adolescents with comparable levels of childhood trauma but who also have low levels of anxiety.

METHODOLOGY
Participants (N=94) were selected from schools in the Cape Town area and underwent structural magnetic resonance imaging at CUBIC (Cape Universities Brain Imaging Centre). The sample consisted of 23 participants with high anxiety/high trauma, 24 with high anxiety/low trauma, 19 low anxiety/high trauma and 28 healthy controls, with low anxiety

and low trauma. We used Freesurfer v.5.3 to assess brain volumes and SPSS v.25 to conduct analysis to calculate the possible significant volumetric differences in brain regions.

RESULTS
Results revealed a trend for significance in the right Anterior Cingulate Cortex between high anxiety/low trauma and high anxiety/high trauma (p = 0.069) participants, and between low anxiety/high trauma and high anxiety/high trauma (p =0.084) for the left PFC and low anxiety/high trauma and low anxiety/low trauma for the right PFC (p = 0.089) participants respectively.

CONCLUSION
We, unfortunately, did not find any significant values, but our results that led towards significance for both the trauma exposed and anxiety groups speaks volumes about the role of both on brain structure. The effects of childhood trauma on brain structure are known, but as we are dealing with adolescents whose brains are still developing, the role of anxiety proneness needs further analysis.

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ABSTRACT TITLE
Factors associated with adherence to follow-up at two years post initiation of treatment in First Episode Schizophrenia

BACKGROUND/AIM
Prevention of new episodes during the first two years after a first episode of psychosis is vital because it may delay treatment refractoriness, deterioration in symptoms, and brain morphological changes over time. However, adherence to treatment is characteristically poor in these patients. The aim of this study was to examine time to drop out in the first 24 months of treatment and clinical and socio-demographic factors associated with patient drop out in patients with first episode schizophrenia.

METHODOLOGY
All patients were treated with flupentixol decanoate (Fluanxol Depot) as part of a larger research study in Cape Town, South Africa. Patients were treated for 24 months from treatment initiation. Drop-out was defined as a patient initiated leaving the study. We compared all those who dropped out of treatment (n=40, 37%) to those who completed 24 months of treatment (n=69, 63%). We examined the relationship between age, gender, ethnicity, diagnoses, duration of untreated psychosis (DUP) and history of illicit substance use and adherence. We used unadjusted and adjusted logistic regression to assess for an association between adherence variables that were

identified on bivariate analyses. We examined time to drop out and factors associated with time to drop-out using Kaplan Meier curves and Cox regression analyses.

RESULTS
We found that drop-out was associated with substance abuse (p=0.01), fewer positive symptoms at baseline (p=0.03), higher educational level (p=0.0028), older age of onset of illness (p=0.02) and shorter DUP (p=0.012). On regression analysis, we found that those who used substances were more likely to drop-out if they were older at age of onset of illness with a shorter DUP.

CONCLUSION
We identified several demographic and clinical factors that may influence non-adherence in a cohort of first-episode schizophrenia patients treated with flupentixol decanoate. Focusing on these factors may have a positive influence on adherence and potentially patient outcomes.

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ABSTRACT TITLE
Adverse childhood experiences, HIV status and substance use in pregnancy at a general hospital in KwaZulu-Natal, SA

BACKGROUND/AIM
Background: Early adverse experiences may be associated with poorer physical and mental health outcomes later. Substance use disorders and HIV remain major public health concerns in South Africa and globally particularly in young women. Perinatal substance use and HIV status is associated with several negative maternal and foetal outcomes and may have bidirectional associations.

Aim: To describe the prevalence of early childhood trauma and perinatal substance use in females post-delivery and to explore the possible associations between early life trauma and substance use in HIV infected and non-infected pregnant women.

METHODOLOGY
A cross-sectional questionnaire survey was conducted among 223 adult women within one-week post-partum using a socio-demographic questionnaire, the WHO Alcohol, Smoking and Substance Involvement Screening Test-(ASSIST V3.0) and WHO Childhood Traumatic Experiences (WHO-ACE IQ V1.).

RESULTS
The most common form of childhood adverse experience reported was having one or no parent,

parental separation or divorce (n= 119, 53.36%) and the participants mean ACE score was 3.27 (SD =2.76). The most commonly used substance in pregnancy was nicotine (n=27, 12.11%), followed by alcohol (n=18, 8.07%). Lifetime and perinatal nicotine and alcohol use was not significantly associated with HIV status (p=0.35 and p=0.60). There was a significant association between adverse childhood experiences and HIV positive status with no viral suppression (p=0.11), alcohol (p=0.02) and tobacco (p=0.01) use in pregnancy.

CONCLUSION

The association between childhood adverse experiences, alcohol and tobacco use and virally unsuppressed HIV status in pregnant women suggest that negative childhood experiences may influence critical health behaviours and outcomes later.

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ABSTRACT TITLE

Feasibility and Acceptability of a clinician monitored PTSD Coach Online Intervention: A Pilot Randomised Control Trial in a low resource setting

BACKGROUND/AIM

Posttraumatic stress disorder (PTSD) is a prevalent and impairing disorder in the general population.[1,2] An evidence-based treatment of choice for PTSD is Prolonged Exposure Therapy (PET) with numerous randomised control trials and meta-analyses demonstrating efficacy in reducing symptoms of both acute and chronic PTSD when compared to other therapeutic strategies. Unfortunately, few clinicians are trained in PET, many have negative perceptions about PET, and PET is time intensive. Creative alternatives are, therefore, required to make services a) more accessible and b) more efficient. Considering the increasing rate of access to the internet, mobile health provides an alternative to service delivery. A mobile health application known as 'PTSD Coach Online' is a potentially accessible treatment alternative for PTSD in the absence of a psychologist or other psychiatric services. Aims: To our knowledge, PTSD Coach Online (PCO) has not previously been evaluated in resource-constrained settings, such as South Africa. Prior to embarking on a well-powered randomised controlled trial (RCT), we conducted a pilot study to assess: a) the feasibility of recruiting, assessing and monitoring individuals with PTSD; b) the appropriateness of the selected assessment battery; c) the utility of the PTSD Coach Online platform in the current setting and d) to compare changes in PTSD symptom severity over the course of treatment between the two intervention arms.

METHODOLOGY

Ten participants with PTSD were randomised to one of the two intervention arms namely, PTSD Coach Online (PCO) or enhanced treatment as usual (e-TAU). Participants were evaluated at three time points (baseline, mid-point at four weeks, and post intervention at eight weeks). The primary outcome was PTSD symptom severity and was assessed with the Clinical Administered PTSD Scale (CAPS-5). Descriptive statistics was done to look for significant differences between the two treatment arms in terms of demographics. Next, we conducted a linear mixed effects analysis to study changes in the PTSD outcome measure (CAPS-5) over time. Verbal feedback from both participants and the volunteer counsellor informed the feasibility, acceptability and utility of PCO.

RESULTS

The results indicate that there was no statistically significant difference in the treatment response trajectories for the PCO and e-TAU groups for CAPS (F2.95, p=0.98). However, each intervention produced clinically significant improvement. Additionally, there was a larger improvement in the PCO arm from baseline (M=40.20; SD=3.27) to post-assessment (M=17.33; SD=14.19) compared to e-TAU (baseline M=37.20; SD=8.43 post-assessment M=25.25; SD=10.24).

CONCLUSION

At post-intervention the PCO participants reported that they found the technical support of the intervention helpful and the sessions tolerable. With regards to PTSD symptom severity the preliminary results suggest that a supported PCO intervention can alleviate symptoms in our setting.

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ABSTRACT TITLE

Methylated quantitative trait loci associated with PTSD in the South African Coloured population

BACKGROUND/AIM

Posttraumatic stress disorder (PTSD) is a complex psychiatric disorder characterised by symptoms of intrusive thoughts, avoidance behaviours, hyper-arousal and negative alterations to cognition and mood. PTSD is unique among psychiatric disorders in that it is a consequence of trauma exposure. Yet, studies previously conducted in the USA have shown that although 50-85% of individuals will encounter a traumatic event in their lifetime, the prevailing prevalence of PTSD is approximately 7%. This discrepancy serves to highlight the existence of factors granting individuals contingent resistance or vulnerability to the development of PTSD. While the genetic mechanisms elemental to PTSD remain largely

unknown, prior epigenome-wide association studies investigating the epigenetic patterns underlying the disorder have shown that PTSD presents methylation alterations associated with disparate functioning in immune- and stress-response pathways that mediate risk and resilience to PTSD. The aim of this study is to integrate genomic and epigenetic data to identify methylated quantitative trait loci associated with PTSD in the uniquely admixed South African Coloured population.

METHODOLOGY

High throughput genomic and epigenetic data previously generated for a cohort of trauma-exposed controls (n = 54) and PTSD patients (n = 55) will be assessed to identify genetic variants that are positionally associated with methylated regions. PTSD severity scores obtained through the Clinician Administered Posttraumatic Stress Disorder Scale for DMS-5 will then be used to investigate whether the severity of PTSD experienced is related to differential methylation levels at any of the considered variants.

CONCLUSION

The data generated will supplement our current research on the genetic and epigenetic mechanisms underlying the development of PTSD in the South African Coloured population.

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ABSTRACT TITLE

Telomere-related gene expression in childhood trauma, depression and HAND

BACKGROUND/AIM

HIV infection can exert pathological effects on the central nervous system. Collectively referred to as HIV-associated neurocognitive disorders (HAND), these effects include symptoms such as neurocognitive impairment, emotional disturbances and motor abnormalities that exist along a spectrum of severity. The risk of developing HAND has been linked to the experience of depression and childhood trauma. Accelerated telomere shortening, an indicator of biological aging, has been independently associated with HIV, depression and childhood trauma, and previous studies in our laboratory have suggested that telomere shortening may act as a biomarker for HAND. The aim of this study is to investigate how the expression of a gene related to telomere length (TL) maintenance, telomerase reverse transcriptase (TERT), is associated with HIV status, childhood trauma, depression and cognitive function.

METHODOLOGY

RNA was extracted from blood samples collected from a cohort of HIV-positive (n = 95) and -negative women (n = 105) with varying exposure to childhood trauma. Gene expression was assessed by polymerase chain reaction using primers specific for TERT. The relationships between cognitive function, HIV status, childhood trauma, depression, TERT expression and TL were investigated using regression models.

RESULTS

HIV seropositivity was found to be associated with lower TERT expression (p = 2.725e-06) and reduced TL (p = 2.289e-07); yet neither HIV status, TERT expression or TL presented a predictive effect on global cognitive score.

CONCLUSION

Our results indicate that HIV infection is associated with TL shortening as well as reduced TERT expression, but that future longitudinal studies are needed to further investigate the relationship between TL and cognitive function within the context of HAND.

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ABSTRACT TITLE

Efavirenz is associated with altered fronto-striatal function in HIV+ adolescents

BACKGROUND

Neurotoxicity associated with the antiretroviral efavirenz (EFV) has been documented in HIV-infected adults, but there are no data on the impact of EFV on brain function in adolescents. We therefore investigated potential alterations in fronto-striatal function associated with EFV use in adolescents.

METHODOLOGY

A total of 86 adolescents underwent a Stop Signal Anticipation Task (SSAT) during fMRI: 39 HIV+ adolescents receiving EFV, 27 HIV+ adolescents on antiretroviral therapy without EFV (matched on age, gender, education, CD4 cell count and HIV viral load), and 20 HIV-negative matched controls (matched on age and gender). The task required participants to give timed GO responses with occasional STOP signals at fixed probabilities. Reactive inhibition was modelled as a correct STOP response and proactive inhibition was modelled after response slowing as the STOP probability increases. A priori

mask based regions associated with reactive and proactive inhibition were entered into two respective Multivariate ANOVAs.

RESULTS
The EFV treatment group showed significantly blunted proactive inhibitory behavioural responses compared to HIV+ adolescents not receiving EFV. There was no difference in reactive inhibition between treatment groups. We also demonstrated a significant effect of EFV treatment on BOLD signal in proactive inhibition regions. There was no difference in regions involved in reactive inhibition. We found no differences between adolescents not receiving EFV and HIV- controls, showing that functional and behavioural differences were unique to the EFV group.

CONCLUSION
Here we demonstrate for the first time a potential adverse impact of EFV on higher cortical function in young HIV+ adolescents.

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ABSTRACT TITLE
Suicidality during the course of pregnancy and the postpartum period in women with serious mental Illness

BACKGROUND
To identify factors that are linked to suicidality during pregnancy and the postpartum period among women with known psychiatric diagnoses.

METHODOLOGY
Pregnant South African women over the age of eighteen with a psychiatric disorder who presented at one of the two maternal mental health clinics where recruitment took place were included in the study sample. Suicidality was assessed by means of a psychiatric interview, The Mini International Neuropsychiatric Interview and the Montgomery Asberg Depression Rating Scale.

RESULTS
Results revealed that women were at a higher risk of experiencing suicidal thoughts if they: had attempted suicide before, presented at a later gestation for psychiatric care, or were employed. However, when interactions between variables were considered, unemployed women who simultaneously experienced unwanted pregnancies also showed a significantly elevated risk of suicidality. It was also clear that multiple assessments, by means of clinical interviews and various scales, were necessary to screen successfully for suicidality in pregnant women diagnosed with psychiatric illness.

CONCLUSION
Results confirm the view of the World Health Organization that in order to improve maternal morbidity and mortality linked to suicidality, women's health should be viewed contextually, not in isolation. Screening for and treatment of perinatal mental illness are essential if we hope to meet the maternal morbidity and mortality targets of the United Nations by 2030.

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ABSTRACT TITLE
An exploratory study of the blood microbiome in posttraumatic stress disorder, schizophrenia and Parkinson's disease

BACKGROUND/AIM
Commensal human microbiota has shown to be vital in understanding health and disease. The gastrointestinal tract's microbiota and their metabolites play a role in digestion, homeostasis, the immune system's maturation and, recent studies show, in the brain's development and function. Gut microbiome has been associated with psychiatric and neurological disorders such as posttraumatic stress disorder (PTSD), schizophrenia (SCZ) and Parkinson's disease (PD), whereas the relationship between blood microbiome and these disorders have not been adequately investigated. In recent years, studies have shown that blood, which was previously thought to have been sterile, contains human microbiome. The presence of microbiota in the blood could be the result of translocation from their usual place of origin such as the gut and skin etc. To investigate the differences of the microbiome in blood, a study has re-analysed previous RNA sequences through the assembly of unmapped reads to the microbial genomes that are available. Exploring the differences in the gut and blood microbiome profiles would provide better insight into the gut-blood barrier's role in the underlying pathological mechanisms of these neuropsychiatric disorders. The aim of this study is to analyse and correlate the microbial profile of blood in patients with PTSD (cases: n=40; controls: n=39), SCZ (cases: n=18; controls: n=21) and PD (cases: n=15; controls: n=19).

METHODOLOGY

For this study, RNA was extracted from peripheral blood that was collected in PAXgene tubes. High quality RNA paired-end sequence reads (at 120bp read length and a depth of 50 million bp) will be separated into human and non-human reads whereby the latter would be identified as candidate microbial reads. For taxonomy profile assignment, PhyloSift will be used. The asbio and vegan packages from R, a statistical programming language, will be used to determine the different microbial compositions and the alpha- and beta-diversity estimations.

RESULTS

For this study, an analytical pipeline will be developed, and preliminary results will be attained.

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ABSTRACT TITLE

Clozapine Haematological Side Effect Monitoring in the Western Cape: A Retrospective Review the Provincial Health Data Centre Database 2015-2017

BACKGROUND/AIM

Clozapine is indicated for treatment-resistant schizophrenia but may cause life threatening leukopenia and agranulocytosis requiring haematological monitoring. Haematological side effects (HSEs) incidence data from Sub-Saharan Africa are lacking. Clozapine reduces cellular immunity and it is unknown whether clozapine is a risk factor for tuberculosis or whether HIV is a risk factor for developing HSEs. The objective was to assess the frequency of white blood cell (WBC) monitoring and to determine the incidence of HSEs during the first 24 weeks of clozapine therapy. The secondary objective was to establish the incidence of tuberculosis and to determine the association of HIV with HSEs.

METHODOLOGY

A retrospective descriptive study of patients initiated on clozapine between January 2015 and December 2017 using data from the Provincial Health Data Centre. A control group of patients initiated on risperidone were selected. Follow-up was 24 weeks.

RESULTS

We identified 22519 patients; 5213 had WBC monitoring (n=1047 clozapine and n=4166 risperidone). The WBC of patients on clozapine were measured at a median of 21 weeks, interquartile range 14 – 23 weeks. The incidence of leukopenia in patients on clozapine was 0.38% (95% CI 0.01-0.76%); 0.41% in patients on risperidone (95% CI 0.21-0.6%), (p=0.91). The incidence of agranulocytosis in patients on clozapine was 0.19% (95% CI 0.0-0.46%); 0.07% in patients on risperidone (95% CI 0.0-0.15%), (p=0.266). The incidence of tuberculosis disease were similar in patients on risperidone and clozapine (0.97% and 0.81% respectively; p=0.542). HIV infected patients had a higher relative risk than non-HIV infected patients of developing leukopenia (1.64% versus 0.22%, p<0.001) and agranulocytosis (0.36% versus 0.04%, p=0.004).

CONCLUSION

Our incidence of clozapine-induced HSEs were lower than in the reported literature (0.8%) and not significantly different compared to risperidone. HIV infection was associated with HSEs. Our findings suggest the possibility of reducing the extent of WBC monitoring in HIV-negative patients.

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ABSTRACT TITLE

MRI brain volume difference between two multiple sclerosis (MS) patients with low vs high disability status suggests a new hypothesis for MS

BACKGROUND/AIM

Treatments for MS targeting the immune system have not resulted in disability prevention, suggesting the need for a new approach. Clinically, patients present with "power outages" to different organs or limbs, which become intermittently non-functional due to interruption of the "power supply" (signal transmission) from the brain. The medical literature posits that the problem is due to sabotage of the "power lines" (myelinated axons) by "security personnel" (the immune system), stating that T-cells are activated by an antigen that mimics myelin. However, no such antigen has ever been found. The aim of the present study was to investigate other reasons for the "blackouts".

METHODOLOGY

Female patients with MS (n=22) and matched controls were included in an MRI study. Lesion numbers and –volumes, as well as brain volumes were determined. For the present presentation, brain volumes of two MS patients of similar disease duration, but with low vs high disability measured with the Expanded Disability Status Scale (EDSS), were compared together with biochemistry, nutrient intake and lifestyle.

RESULTS

Patient no.1, 58y, disease duration 16y, participated in the Stellenbosch University Pathology-supported genetic testing (PSGT) MS study since diagnosis. This included nutrition- and lifestyle interventions for iron-, vitamin B12 and vitamin D deficiencies directed by regular biochemistry testing. Her EDSS was maintained at 2 (benign), with minimal effects on her daily life. White- and grey matter brain volumes were preserved. Patient no.2, 50y, disease duration 15y, had low iron, vitamin B12 and vitamin D, and low dietary intake of fruits and vegetables. Her EDSS was 6.5: she could not drive and could not walk without support. Her brain volume was reduced. After 9 months of sufficient nutrient intake through supplementation and diet, her EDSS was 4.0, she could drive again and walk without support. Neither of the patients was on MS medications.

CONCLUSION

Brain volumes and disability levels of the two patients suggested that interruption of signal transmission in MS occurs due to neglected maintenance of the "power stations" (oligodendrocytes, that synthesise myelin). Myelin insulates axons and is involved in enhanced signal transduction. Oligodendrocytes require iron and methylation capacity to synthesise myelin. Therefore, a lack of these nutrients results in "power outages".

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ABSTRACT TITLE

Prenatal nicotine exposure is associated in young children with abnormal connectivity of resting-state cognitive control networks

BACKGROUND/AIM

Prenatal exposure to substances of abuse can have detrimental effects on neurodevelopment in early childhood. Rapid functional differentiation of somatosensory and cognitive control (CC) brain networks in young children may make them particularly vulnerable to associated neurotoxicity. Accordingly, we tested whether prenatal nicotine exposure is associated with subsequent differences in the connectivity of intrinsic CC and somatosensory functional brain networks in 2-3-year-old children.

METHODOLOGY

fMRI data was acquired for a cohort of 31 nicotine-exposed (NEX) and 18 nicotine unexposed (NUE) infants (average age: 33 months (range: 30-39), 59% male), as part of the Drakenstein Child Health Study. Scans were conducted during 8 minutes of non-sedated sleep in a 3T Siemens scanner at the Cape Universities Body Imaging Centre. Nicotine exposure was defined as a positive urine test for cotinine during the 2nd trimester of pregnancy. Evidence of pre-natal exposure to alcohol was grounds for exclusion from this analysis. A non-parametric permutation procedure was used to identify statistically significant group differences in the connectivity of a subset of networks identified in this cohort using probabilistic independent components analysis.

RESULTS

The NEX and NUE children were comparable with respect to gender distribution and weight, though the former were on average slightly younger (32.6 vs 34.3 months, Mann Whitney Z = 2.93, p =0.003). Of the 6 networks of interest (salience, default mode, bilateral frontoparietal, and lateral and medial somatosensory networks), greater connectivity was observed in the NEX subjects for all the higher order cognitive networks, after adjusting for age and average motion (p 0.01). Nicotine exposure was not associated with somatosensory network connectivity.

CONCLUSION

We present novel evidence that pre-natal exposure to nicotine is associated with disruptions to the functional integrity of CC networks. Future work will assess the implications of the presented findings on associated cognitive functioning in these children

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ABSTRACT TITLE

Investigation of the Effects of Cannabidiol on Vacuous Chewing Movements, Locomotion, Oxidative Stress and Blood Glucose in Rats Treated with Oral Haloperidol

BACKGROUND/AIM

This study is important in a country like Nigeria where

movement disorders are still common because the relatively cheap conventional antipsychotics are still widely in use. Movement disorders are known to be more common in patients on the conventional antipsychotics though they have also been reported in the atypical antipsychotics. Tardive dyskinesia (TD) is however more problematic because unlike the acute dystonias, it can be irreversible. Although several agents have been tried in the management of tardive dyskinesia the results have not proved fruitful. It is therefore pertinent to continue to search for new and better forms of management of this difficult to manage movement disorder in psychotic patients. Hypothesis: My main hypothesis is that Cannabidiol (CBD) is neuroprotective and can be used to prevent symptoms of oro-bucco-lingual dyskinesia in patients with psychotic disorders on antspychotics. AIM: The purpose of the research is to find out if cannabidiol can be used to ameliorate the symptoms of tardive dyskinesia. OBJECTIVES: To determine the efficacy of cannabidiol in ameliorating vacuous chewing movement (VCM). We compared the FBS within and between the groups. We also compared elevated plus maze line crossing in open field test, rota rod and objective recognition tests to assess if cannabidiol can ameliorate the oxidative stress induced by antipsychotics in animals.

METHODOLOGY

There are six groups; the first group consists of oral haloperidol at 5mg/kg only for three weeks. The second group consists of 10 animals treated with oral haloperidol at 5mg/kg and cannabidiol at 5mg/kg for 21days and VCM scored after 12h, 5days, and 3 weeks of medication withdrawal. The third group consists of oral haloperidol 5mg/kg and cannabidiol at 3mg/kg for 21days and VCM scored after 12h, 5days, and 3 weeks of medications. The fourth group consists of haloperidol 5 mg/kg p.o. + cannabidiol 10 mg/kg p.o. The fifth group consists of cannabidiol 5mg/kg per oral only. The sixth group is the control where none of the medications were administered except distilled water.

RESULTS

The results showed that there was a significant difference between Group A and other groups on post hoc analysis, (p=0.0001) with Group A exhibiting more VCM compared to the other groups

CONCLUSION

We confirmed that CBD can ameliorate motor impairments produced by haloperidol. Our data suggest that CBD can be combined with haloperidol to prevent the emergent of extrapyramidal side effects and long-term movement disorders such as tardive dyskinesia.

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ABSTRACT TITLE

The rs2736100 within the telomerase reverse transcriptase gene and rs16847897 within the telomerase RNA complex gene moderate the association between internalizing mental disorders and telomere length attrition among HIV+ children and adolescents in Uganda

BACKGROUND/AIM

Internalizing mental disorders (IMDs) are associated with accelerated telomere length (TL) attrition; however, the nature of this association is unknown. Single nucleotide polymorphisms in the telomerase reverse transcriptase (TERT) and telomerase RNA component (TERC) genes have been reported to influence mean TL, while genetic variations in the serotonin transporter (SLC6A)) and the tryptophan hydroxylase 2 (TPH2) genes have been reported to moderate the association between social environment and TL. This case-control study investigated the moderating effects of selected polymorphisms in TERT, TERC, SLC6A4 and TPH2 on the association between IMDs and relative TL (rTL), among Ugandan HIV+ children and adolescents (5-17 years).

METHODOLOGY

In 368 cases with any internalizing mental disorder (IMD) and 368 age- and sex-matched controls, rTL was assessed using quantitative polymerase chain reaction. Variants in TERT (rs2736100, rs7726159, rs10069690, rs2853669), TERC (rs12696304, rs16847897, rs10936599) and TPH2 (rs1843809, rs1386494, rs34517220) and SLC6A4 (5-HTTLPR (rs35531, STin2.VNTR) were genotyped. Independent sample t-tests were used to assess the association between IMDs and rTL at baseline and 12 months, while two-way ANOVA was used to assess the interaction effect between each of the polymorphisms and IMDs on rTL both at baseline and 12 months.

RESULTS

At baseline, cases had significantly longer mean rTL compared to controls (p = 0.001). None of the polymorphisms significantly moderated the association between IMDs and rTL at baseline. At 12 months, we observed no statistically significant difference in 12-month rTL between baseline cases and controls (p = 0.117), however, on modeling the effects of each of the selected polymorphisms, we observed that the interaction of IMDs and each of

rs2736100 (TERT) and rs16847897 (TERC) significantly influenced rTL (p = 0.007 and p = 0.012, respectively).

CONCLUSION

The TERT rs2736100 and TERC rs16847897 polymorphisms moderate the association between IMDs and rTL among Ugandan HIV+ children and adolescents. The T-allele for rs2736100 and a G-allele for rs16847897 are associated with accelerated rTL attrition among cases of IMDs. The mechanisms under which these alleles interact with IMDs to moderate rTL requires further investigation.

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ABSTRACT TITLE

Rare finding of diffuse carotid artery disease, IJV stenosis and brain pathology in a patient with Multiple Sclerosis: case report

BACKGROUND/AIM

Cerebral hypoperfusion and impaired cerebral venous drainage are reported to be risk factors for multiple sclerosis (MS). Furthermore, lifestyle and biochemistry have significant effects on the brain and vascular system. We report a 60-year-old female with MS who participated in a research study and presented with diffuse extracranial vascular disease and brain pathology.

METHODOLOGY

Grey-scale imaging, Colour and Spectral Doppler analysis of the carotid arteries and internal jugular veins were performed on the patient. The vessels were sonographically interrogated to determine patency, stenosis, occlusions and/or abnormal blood flow patterns. The patient also had magnetic resonance imaging (MRI) of the brain to exclude structural and functional pathology. Biochemistry, lifestyle, genetic and disability (Expanded Disability Status Scale, EDSS) assessments were available.

RESULTS

The vascular ultrasound demonstrated multiple stenotic lesions (50%) in bilateral carotid arteries and stenosis of the left internal jugular vein (IJV), suggestive of chronic cerebrospinal venous insufficiency (CCSVI). The MRI illustrated normal pressure hydrocephalus and brain degeneration which is in keeping with the vascular ultrasound findings. The radiological findings of multiple extracranial vascular pathologies in conjunction with brain pathology in a single MS patient remains a rarity as these specified pathologies were not seen in the remaining 24 MS patients who participated in the MS research study.

CONCLUSION

In summary, this case demonstrates the importance of extracranial vascular ultrasound and brain MRI in the assessment of extracranial vascular disease and brain pathology in patients diagnosed with MS. Identification of risk factors associated with MS using these imaging modalities, may result in the implementation of appropriate patient management aimed at slowing down disability progression and improving the quality of life of the patient.

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ABSTRACT TITLE

Cannabis use in adolescence and psychosis later in life: Are there factors mediating the relationship? A systematic review and meta-analysis

BACKGROUND/AIM

Research has shown a pattern of increased risk for psychosis as well as worse outcome in psychosis among individuals exposed to cannabis during adolescence. This study was a systematic literature review investigating whether cannabis use during adolescence interacts with other factors to increase risk for psychosis later in life.

METHODOLOGY

First, a narrative review is presented. A meta-analysis was subsequently conducted using Review Manager

5.3. The statistical method used was Mantel-Haenzel, random effects analysis was applied, and results were presented in the form of risk ratios.

RESULTS

36 studies met inclusion criteria and were included in the review and 16 studies were included in the meta-analysis. Overall adolescent cannabis use increased risk for psychosis compared to no cannabis use (RR=1.75, 95%CI, 1.45-2.10). Early-onset of cannabis use had greater risk for psychosis compared to late-onset use (RR=2.32, 95%CI, 1.15-4.66). Frequent cannabis use had increased risk for psychosis compared to infrequent and no cannabis use (RR= 2.38, 95%CI, 1.51-3.74 and RR= 2.75, 95%CI, 1.90-3.97). Other factors found to moderate the relationship between cannabis use and the risk of psychosis were exposure to childhood trauma, concurrent use of other substances and genetic factors.

CONCLUSION

Adolescent cannabis use is associated with an increased risk for psychosis later in life. In addition, there are factors that mediate this relationship. There is a need for more research to assess the interaction between these factors, adolescent cannabis use and psychosis risk.

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ABSTRACT TITLE
Alcohol's effect on the gut microbiome of pregnant women

BACKGROUND / AIM
Prenatal alcohol exposure is one of the most preventable causes of birth defects, developmental disorders and mental retardation, yet the prevalence of Fetal Alcohol Spectrum Disorder (FASD) in the Western Cape of South Africa is 20-28%, significantly higher than the global prevalence of 0.77%. Excessive alcohol intake can result in alterations in the gut microbiome, causing both the microbial composition and functions to change from a beneficial state to one that is harmful to the host's health. The aim of this study was to compare gut microbial composition between women who exhibited hazardous alcohol use during pregnancy (cases) and those who abstained from drinking throughout pregnancy (controls).

METHODOLOGY
A total of 78 pregnant women were recruited - 38 cases and 40 controls. Microbial DNA extraction was performed on stool samples, followed by sequencing of the 16S rRNA V3-V4 region. The dada2 pipeline was used to pre-process the fastq sequencing files, create an amplicon sequence variant table, and assign taxonomy using the Ribosomal Database Project reference database. Differential compositional analyses were performed using PhyloSeq, while statistical analyses of microbial composition, alpha- and beta-diversity calculation and enterotype determination was done using the R programming environment.

RESULTS
The gut microbiome was dominated by Prevotella, Bacteroides and Succinivibrio. There were no significant differences in diversity measures or relative abundance of genera between cases and controls. The faecal communities clustered into two enterotypes - enterotype 1, enriched in Bacteroides, and enterotype 2, enriched in Prevotella. Although no significant gut microbial differences were identified, several cases exhibited a higher relative abundance of Prevotella which has been linked to mucin degradation. Mucin degradation may result in a compromised intestinal barrier, which, in turn, may result in increased bacterial translocation across the normally impenetrable intestinal barrier.

CONCLUSION
Although no significant differences were identified between cases and controls, differences may become evident with a larger sample size. An altered maternal gut microbiome may exert its influence on the fetal brain via immune-mediated pathways or it may result in abnormal infant gut colonisation, thereby resulting in altered infant gut microbiota functioning, which may subsequently result in increased susceptibility to disease.

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ABSTRACT TITLE
Prevalence of psychiatric comorbidities and quality of life in adults with inherited bleeding disorders in central South Africa

BACKGROUND / AIM
Inherited bleeding disorders (IBDs) are relatively uncommon, but pose unique health-related challenges. IBDs are acquired through inheritance of single-gene mutations that cause abnormal bleeding. Due to their chronic nature, one would expect similar psychosocial problems as seen in other chronic diseases. The aim of this study was first, to evaluate the prevalence of psychiatric

comorbidities in a population with IBDs, and second, to evaluate risk factors for the development of psychiatric disorders and impaired quality of life.

METHODOLOGY

We conducted a cross-sectional, observational study in two South African Haemophilia Treatment Centers (HTCs) by interviewing 40 adult patients with IBDs on their usual follow update. We collected demographic and clinical data using a standardized questionnaire and accessing patient files, we evaluated patients for psychiatric illness using the M.I.N.I., health-related quality-of-life (HR-QoL) using the EuroQoL (EQ-5D) and functional status using the FISH tool.

RESULTS

The median age of the sample was 29,5 years. The majority were male (83%), unemployed (75%), receiving a disability grant (53%) and had never been married (65%). The majority had haemophilia (73%), followed by hereditary heamorrhagic telangiectasia (HHT), Von Willebrand Disease (VWD) and Bernard-Soulier syndrome (BSS) (23%, 2,5%, and 2,5%, respectively). 10% of the sample were affected by HCV and HIV respectively. 43% of the sample had one or more psychiatric disorder and the lifetime prevalence of MDD was 30%. Patients with a bleeding frequency of less than once per month had a significantly lower risk of having any problems in the domains of self-care (0%) and usual activities (13%) when compared to patients with a bleeding frequency of 1-3 times per month (25% and 56%, respectively, p-value=0,048) and >3 times per month (33% and 44%, respectively, p-value=0,042). In addition, patients who perceived family and friends as supportive were less likely to score high in the domain of pain/discomfort than patients who did not (18,8 versus 32,2, respectively; p-value=0,01).

CONCLUSION

The prevalence of psychiatric disorders is high in the population suffering from IBDs and screening routinely is justified. HR-QoL might improve if bleeding frequency can be reduced with prophylactic, home-based care and psychoeducating families.

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ABSTRACT TITLE

The feasibility and acceptability of perinatal depression screening and counselling for women living with HIV in Malawi

BACKGROUND/AIM

Depression is highly prevalent in antenatal and postnatal women living with HIV (WLHIV) in the sub-Saharan region yet remains underdiagnosed and undertreated. Perinatal depression (PND) is associated with adverse pregnancy and infant outcomes. The antenatal period presents an opportunity for Malawian WLHIV to be linked to antiretroviral (ART) care; however, depression is implicated in poor engagement with ART services and poor ART adherence. Malawi lacks mental health personnel and infrastructure. Integration of depression screening and management into existing antenatal clinics may close the treatment gap in perinatal WLHIV who have comorbid depression. This study aims to understand the feasibility of perinatal depression (PND) screening and preferences for treatment among WLHIV in Malawi.

METHODOLOGY

We completed consecutive PND screening in WLHIV attending pre- or post-natal appointments at 5 maternity clinics in Lilongwe, Malawi using a validated local language version of the Edinburgh Postnatal Depression Scale (EPDS). In-depth qualitative interviews were subsequently conducted on women who screened positive for PND (EPDS score >10) (n =24) and different cadres of maternity health care providers (n =10) at the clinics. In-depth interviews themes included barriers and facilitators to the integration of PND interventions and treatment preferences. Interviews were audiotaped, transcribed, translated and salient themes were coded. Analysis was conducted using NVivo 12 software

RESULTS

All women and providers welcomed PND screening and counselling. Nurses were identified as the most suitable health personnel to deliver screening and counselling. Possible barriers to the uptake of PND interventions were lack of human resource and health worker attitudes. Women stated a preference for one-on-one counselling over group counselling or antidepressant medication.

CONCLUSION

Treating PND is essential to improve pregnancy outcomes, maternal and infant health and engagement in HIV care. Our results suggest that an effective and sustainable PND intervention for this population consists of a brief streamlined screening questionnaire and individualised counselling.

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ABSTRACT TITLE

Cognitive Deficits in Perinatally Acquired HIV-positive Children on cART in South Africa

BACKGROUND

Children with perinatally acquired HIV (PHIV) are at risk for significant neurodevelopmental problems due to the direct effects of HIV on the brain, in utero ART exposure, and environmental factors that can be observed as early as infancy. This study aimed at identifying cognitive deficits in children with PHIV who was virally suppressed on cART.

METHODOLOGY

The Wechsler Preschool and Primary Scale of Intelligence-III was administered to assess the cognitive function of 152 purposively recruited hospital based sample of children with PHIV on cART, aged 3 years to 7 years 6 months (mean age 63.13 months).

RESULTS

The results showed that children with PHIV performed poorly on the cognitive measure, with more than 70% showing impairment in the domain of global cognitive function. They performed more poorly on block design, object assembly, symbol search, coding and similarities.

CONCLUSION

The findings supports an association between HIV infection in children and cognitive impairment in the domains of working memory and processing speed, despite being virally suppressed on cART. These cognitive faculties act as basic executive functions that are critical for learning, school readiness and success, and ultimately treatment adherence in adolescence. The need for early identification of neurodevelopmental problems is crucial since early psychosocial interventions can lead to better outcome for children with PHIV.

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ABSTRACT TITLE

Different behavioural phenotypes in the deer mouse model of obsessive-compulsive disorder and its response to serotonergic and dopaminergic modulation

BACKGROUND/AIM

Obsessive-compulsive disorder (OCD) is a chronic and debilitating psychiatric condition, characterized by a significant rate of treatment resistance to first-line selective serotonin reuptake inhibitor (SSRI) intervention. In this regard, augmentation strategies employing low-dose anti-dopaminergic drugs have demonstrated some value. It has previously been suggested that different obsessive-compulsive phenotypes may be associated with unique neurobiological involvement; this may potentially contribute to treatment response. Therefore, the aim of this study was to explore the treatment response of two unique, but equally persistent and naturalistic behavioural phenotypes in the deer mouse model of OCD, viz. large nest building (LNB) and high marble burying (HMB) to serotonergic, anti-dopaminergic and combination intervention.

METHODOLOGY

LNB and HMB were characterized as described previously. Briefly, nest building behaviour was assessed over 7 consecutive dark cycles, while marble burying has been scored over 3 consecutive trials. Subsequently, 24 animals expressing LNB and HMB respectively were treated with either 1) normal water, 2) the SSRI, escitalopram oxalate (50 mg/kg/day), 3) the dopamine antagonist, flupentixol dihydrochloride (0.9 mg/kg/day) or 4) a combination. All animals (n = 6 per treatment group) received treatment for 28 days via the drinking water with new drug solutions prepared every day.

RESULTS

LNB behaviour was significantly attenuated by escitalopram as well as the combination of escitalopram and flupentixol, while marble burying demonstrated a moderate response to escitalopram only, remaining insensitive to either flupentixol alone or combination treatment.

CONCLUSION

The results reported here indicate that LNB and HMB can be distinguished based on the unique involvement of serotonergic and dopaminergic signaling. Our findings support literature suggesting that different obsessive-compulsive phenotypes may potentially be associated with unique neurobiological involvement. Future research is necessary to elucidate the role of serotonin-dopamine interactions in patients presenting with different obsessive-compulsive phenotypes.

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ABSTRACT TITLE

Development of a post-traumatic stress disorder model in zebrafish: Conspecific alarm substance induced fear conditioning

BACKGROUND/AIM

Post-traumatic stress disorder (PTSD) is a disorder that manifests in some individuals after experiencing a severely traumatic event. Because zebrafish (Zf) exhibit various homologies with rodents and humans, they have emerged as a useful model species to study disorders such as PTSD. Conspecific alarm substance (CAS) is a pheromone-like exudate released upon skin damage of Zf, eliciting alarm reactions in neighbouring Zf, and hence has etiological relevance in assessing the natural fear response of Zf. Therefore, in developing a translational Zf model of PTSD, the aim of this study was to assess the behavioural responses of CAS-exposed Zf during exposure and contextual re-exposure.

METHODOLOGY

Zf were randomly divided into four different groups (n = 10 per group), viz. 1) vehicle/no cue, 2) CAS/no cue, 3) vehicle/cue and 4) CAS/cue. On day 1, exposures were performed for 6 min, following a habituation period of 1 h in the same trapezoid tanks (15 cm x 28 cm (top) / 22 cm (bottom) x 7 cm) as those in which behavioural analysis was conducted. Behavioural observation commenced immediately after the stressor had been introduced. On day 2, Zf were again introduced in the same tanks as those used for the initial exposure, albeit in the absence of actual CAS exposure. Anxiety-like behaviour was measured on both days by measuring the time spent in and the number of entries into the top and bottom sections of the tanks over 6 min.

RESULTS

Our results indicate that CAS exposed Zf displayed a significant degree of anxiety-like behaviour during the initial exposure to the stressor, which was maintained on the subsequent day when exposed to a contextual reminder, under both non-cued and cued circumstances.

CONCLUSION

By demonstrating fear conditioning and persistence in the absence of the primary stressor, CAS exposure induces behavioural changes akin to PTSD in Zf. Further, Zf are sensitive to temporal and contextual modification and therefore present pre-clinical research with a useful model with which to study the pharmacology and biology of PTSD.

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ABSTRACT TITLE

Hippocampal subfield volumes and change in body mass index over 12 months of flupentixol decanoate treatment in first-episode schizophrenia spectrum disorders

BACKGROUND/AIM

Localized and lateralized abnormalities in hippocampal subfield size have been demonstrated in both schizophrenia and obesity. However, the effects of hippocampal structure on the temporal evolution of metabolic syndrome risk factors in schizophrenia remains unclear. In response to this knowledge gap, the aim of the present study was to explore the associations between hippocampal subfield volumes and change in body mass index (BMI) over 12 months of treatment first-episode schizophrenia spectrum disorders

METHODOLOGY

The present study included 90 antipsychotic-naive or minimally treated patients (66 males, 24 females; mean age= 24.7±6.8 years). BMI was assessed at baseline, and again at months 3, 6, 9 and 12, and hippocampal subfields of interest (CA1, CA3, CA4, presubiculum, subiculum) were assessed using a segmentation algorithm included in the Freesurfer 6.0 software program.

RESULTS

In male patients, there was a significant inverse correlation between baseline BMI and total hippocampal size as well as CA1, CA3, and CA4 subfield volumes, independent of age and substance use, which survived correction for multiple comparisons (adjusted p-value = 0.041). In female patients, the BMI change score was significantly inversely associated with total hippocampal size, as well as CA1, CA3 and subiculum subfield volumes, adjusting for the same covariates. The association between smaller subiculum and weight gain in female patients surviving correction for multiple comparisons (adjusted p-value = 0.036).

CONCLUSION

High baseline BMI may be associated with smaller hippocampal subfield volumes in first-episode schizophrenia, which, in turn, correlates with greater weight gain over 12 months of treatment, in a sex-dependent fashion.

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ABSTRACT TITLE
Better Care with Faster Reporting

BACKGROUND/AIM
This presentation aims to initiate a discussion around Quality Improvement in Psychiatric healthcare. This poster provides a framework to discuss the various components of what was named by W. Edward Deming as the "System of profound knowledge" - his insight was cardinal in the application of this science. To illustrate this model a small study was undertaken, i.e. the time it took the transcriptionist to complete a transcription of a psychiatric consultation.

METHODOLOGY
The PDSA (Plan, Do, See, Act) cycle which is the framework for the "Model of Improvement" asks 3 questions, namely: (1) what are we trying to accomplish, (2) how will we know the change is an improvement and (3) what change can we make that will result in improvement. The skills to support improvement are discussed in terms of (1) supporting change with data, (2) developing change and (3) testing the change. The study measured the transcription time, and this served as baseline data. A change was initiated, and the outcome measured.

RESULTS
This poster illustrates how values-based and clinical practice skills (awareness, knowledge, reasoning skills and communication) are used with the PDSA cycle to gather data and document change regarding the time it took to complete transcriptions at a healthcare facility. The results show that the change was effective in that transcription time was significantly reduced. The importance of the driver diagram, and the primary and secondary drivers on achieving the change ideas are reviewed. The use of data for improvement in healthcare and understanding variation using run charts (including Shewhart) form part of the discussion.

CONCLUSION
The model of improvement shows that Quality Improvement in psychiatric healthcare can be achieved by applying the science of improvement.

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ABSTRACT TITLE
Violence and depression among men who have sex with men in Tanzania

BACKGROUND/AIM
Men who have sex with men (MSM) continue to be at an increased risk of violence, HIV transmission and mental disorders, such as depression, in addition to numerous bio-psycho-socio challenges they face as a result of their sexual orientation.

METHODOLOGY
We recruited 345 MSM using a respondent-driven sampling technique. The revised Conflict Tactic Scale, PHQ-9 and questions adapted from the TDHS 2010 were used to assess for violence, depression and HIV-risk behaviors. Continuous and categorical variables were analyzed using Student's t-test and the Chi-square test, respectively. Logistic regression analyses were performed to identify predictors of depression and HIV-risk behaviors. All tests were two-sided and $p < 0.05$ was taken as significance level.

RESULTS
Overall, 325 (94.2%) of the participants experienced any form of violence, with 90.1% experiencing emotional violence, while physical and sexual violence were reported by 254 (73.6%) and 250 (72.5%) of the participants, respectively. Depressive symptoms were present in 245 (70.0%) and participants who experienced violence had a 3-fold increased risk of depressive symptoms compared to their violence-free counterparts ($p < 0.001$). On the other hand, participants who experienced any form of violence displayed an over 11-fold increased rate of depressive symptoms compared to their counterparts who were violence-free ($p < 0.001$). Violence experience was found to be the strongest associated factor for depressive symptoms.

CONCLUSION
The rates of violence, depressive symptoms and HIV risk behaviours amongst MSM are astoundingly high, necessitating extensive interventions. In view of this, deliberate measures to deal with the reportedly high rates necessitate joint intervention efforts from the policy makers, health providers and community at large.

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ABSTRACT TITLE
Substance use prevalence and outcomes in a psychiatric outpatient population in Southern Gauteng

BACKGROUND/AIM
Substance use is commonly comorbid with mental illness. A comorbid substance use disorder (SUD) in patients with mental illness increases the likelihood of

poorer outcomes of psychiatric care, including poor medication adherence, and increased frequency and length of stay of hospital admissions. South African studies have documented a prevalence of substance use of between 40-50% in a general hospital psychiatric setting. Aim: To ascertain the prevalence of substance use, its clinical correlates, and relationship with hospital admissions among patients attending an urban community psychiatric clinic.

METHODOLOGY

A retrospective record review of patients who had attended a community psychiatric clinic in Southern Gauteng over a 24-month period. Systematic sampling was used to ensure a representative sample of clinical files. Data regarding socio-demographic and clinical profiles were collected. Missed clinic appointments were used to measure adherence to care. Other outcomes measured were the number of hospital admissions and average length of hospital stay during a 24-month period. Those with substance use and those with no substance use were then compared using these variables.

RESULTS

A total of 368 clinical records were analysed. The study sample consisted predominantly of males 52.2 % with the population being mainly black 99.2 %, single and with secondary schooling. The percentage of the sample was also unemployed and not on disability grant. The most common psychiatric disorder was schizophrenia followed by substance induced psychotic disorder. The most commonly used substance was cannabis, followed by alcohol. Those with schizophrenia had a higher comorbid SUD compared to other primary psychiatric disorder. A significantly higher number of missed clinic appointments (p = 0.0001) and number of hospital admissions (p = 0.0001) was found among those with a SUD than those without. Considering only 170 patients with 1 or more hospital admissions, we find no significant differences in the median hospital length of stay of SUD and non-SUD groups (p=0.43).

CONCLUSION

The study highlights the negative effect of substance use in patients with mental illness with regards to their adherence to clinic appointments, recurrent hospital admissions and longer duration of stay during hospital admission.

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ABSTRACT TITLE

Perspectives of Traditional Healers in the Sedibeng District of Gauteng on mental illness and collaborative work with western mental health care

BACKGROUND

People with mental illness in South Africa consult traditional healers. Collaboration between westernized mental healthcare services and traditional healers has been proposed to improve care outcomes. This study aimed to explore the perceptions of traditional healers in the Sedibeng District of collaboration with mental health professionals.

METHODOLOGY

A qualitative study with individual in-depth interviews was conducted. A purposive sample of traditional healers in the Sedibeng district was recruited and interviewed in their practice-setting. The framework approach was employed to analyze the data.

RESULTS

Seven traditional healers were interviewed. All were involved in HIV/AIDS, hypertension and diabetes screening but had little contact with mental healthcare services. Several explanatory models for the causes of mental illness were held, but psychotic and non-psychotic symptoms were accurately identified. Although six participants recognized a role for western mental healthcare services, all participants believed that western mental healthcare cannot treat mental illness of supernatural aetiology. All participants reported feeling disrespected by healthcare practitioners. They felt their understanding of the patient and their family should be taken into consideration. Most wanted educational workshops to improve their mental health knowledge.

CONCLUSION

Collaboration between traditional healers and Sedibeng mental health services is a possibility but requires effort in mutual respect and communication.

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ABSTRACT TITLE

Investigating Inflammation in Neuropsychiatric Disorders

BACKGROUND/AIM

Neuropsychiatric disorders (NPDs) have a high prevalence of nearly 30% in South Africa and influences the health and economic well-being of affected individuals. Numerous studies have reported an inflammatory mechanism, characterised by increased concentrations of pro-inflammatory cytokines, that contributes to the pathophysiology of these disorders. Furthermore, a heightened state of inflammation pre-disorder has been linked to increased susceptibility and risk for comorbidity. The aim of this study is to measure pro-inflammatory cytokines as markers of inflammation in patients with posttraumatic stress disorder (PTSD), Parkinson's disease (PD) and schizophrenia (SCZ), as well as controls. Furthermore, a longitudinal analysis was done for the SCZ cohort at baseline (treatment naïve) and 12-month follow-up (following treatment).

METHODOLOGY

Samples were previously collected as part of a larger cohort study ("Shared Roots"). The pro-inflammatory cytokines interleukin 1-beta (IL-1β), interleukin 6 (IL-6), tumor necrosis factor alpha (TNF-α) and interferon-gamma (IFN-g) were measured in duplicate in serum samples of the three NPDs (138 PTSD, 46 PD, 32 baseline SCZ, and 16 follow-up SCZ patients, as well as 180 PTSD, 21 PD, 39 baseline SCZ, and 23 follow-up SCZ controls) using the MILLIPLEXâ Map Human Cytokine/Chemokine Magnetic Bead Panel (Merck's) on the Bio-Plexâ 200 Luminex system (Bio-Rad), according to the manufacturer's specifications.

RESULTS

Statistical analysis is underway, and data will be analysed. Results will be presented at the conference.

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ABSTRACT TITLE
Adult Attention-Deficit/Hyperactivity Disorder in South Africa: What is the academic literature reporting on?

BACKGROUND
The development of an individual is affected if Attention-Deficit/Hyperactivity Disorder (ADHD) is left untreated or is misdiagnosed. Studies have reported that 6% to 8% of school children are affected by ADHD. Behavioural symptoms require treatment during preschool years. At each stage of growth other areas of academic, social and emotional development are negatively impacted. Though initially thought to be condition affecting only children, this no longer holds true. ADHD persists into adulthood in two-thirds of patients and globally the focus in adults has garnered considerable interest. The objective of the

study was to provide an overview of the studies and research conducted on adults with ADHD in South Africa.

METHODOLOGY
A systematic review of research articles published on adult ADHD in South Africa was undertaken from January 1960 to November 2016. Electronic databases including EBSCOHost, Emerald, Pubmed, Sabinet and Science Direct were used. The database search resulted in 1209 articles being identified. The review resulted in 29 articles being included in the analysis.

RESULTS
A greater number (58.62%) of the articles were published in local South African journals, 27.59 % of the articles were published in international journals and 13.79 % were published in African journals (excluding South Africa). Fourteen of the 29 studies reviewed were exploratory, 10 were reviews/commentaries, four were developmental studies and one was a phenomenological study. The impact factors for nine of the journals were not stated and the remaining 11 have impact factors ranging from 0.207 to 6.78. In 2004, only one article on adult ADHD was published in South Africa and by 2015, the number of publications increased to six. Areas covered in the various publications included the following themes: reviews/commentaries, university students, co-morbid conditions, impact on siblings, prevalence, smoking, mental health disorders, drug utilisation, and healthcare professionals.

CONCLUSION
In South Africa adult ADHD is gaining interest, however, there are limited studies conducted to date. It is hence recommended that further studies are conducted in this new and developing field.

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ABSTRACT TITLE
Genome-wide differentially methylated genes associated with PTSD in female rape survivors

BACKGROUND
Alterations to the epigenome in response to psychological trauma have been reported as a mechanism mediating gene and environmental interactions. Differentially methylated genes involved in the biological pathways associated with the adverse phenotypic behavioural presentations in posttraumatic stress disorder (PTSD) have previously been identified. However, the majority of studies focussed on differential methylation of single candidate genes in participants exposed to heterogeneous index traumas as opposed to

genome-wide methylation differences associated with homogeneous trauma types. The objective is to identify genome-wide differences in methylation profiles of a group of women exposed to rape, with and without PTSD.

METHODOLOGY
The sample included female isiZulu participants (n = 48) between 18 and 40 years old, who reported an incident of rape within the previous twenty days. Participants were matched on HIV status, age, childhood maltreatment and other lifetime trauma exposure, body mass index and smoking status. DNA was extracted from peripheral blood and analysed using the Illumina Epic BeadChip microarray.

RESULTS
The results of the epigenetic comparison will be discussed pending the outcome of the analysis and longitudinal validation of the findings (in selected top genes using EpiTYPER; n = 200) at baseline, 3 months and 6 months post-rape.

CONCLUSION
Previous studies have found significant differences in epigenetic profiles of participants with and without PTSD. Differential methylation has been associated with genes related to the nervous system, immune and inflammatory response, and neural and cellular circuitry development. The findings of this study will be compared to previous results.

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ABSTRACT TITLE
Attitudinal differences towards Mental Health Services between younger and older South African adults

BACKGROUND/AIM
Life expectancy among the global population is increasing and, for the first time in history, most people can expect to live to the age of 60 and older. An important concern is that older adults underutilize mental health services. Internationally, attitudinal barriers represent the primary barriers to help-seeking and adherence, but there is a lack of similar data from Southern Africa and, particularly, from South Africa. Objectives: The study investigates attitudinal differences towards mental care in a group of older adults and their younger adult progeny in the Pinelands suburb of Cape Town. The assessment was done using the Inventory of Attitudes towards Seeking Mental Health Services (IASMHS). The preferred type of care and the effect of exposure to previous help-seeking experience on attitudinal differences were also assessed.

METHODOLOGY
Cross-sectional data using self-administered (younger adults) and interviewer-administered (older adults) questionnaires were collected for the older adults and their younger adult progeny. Statistical analysis using SPSS was conducted to determine the attitudinal differences between the two groups of adults and concordance within the family.

RESULTS
A total of 103 older adults (mean age 81 years) and 24 younger adults (mean age 52 years) were recruited. The overall IASMHS score was high for both groups (73.80 versus 78.08), with no differences between the groups on two of the sub-scales: attitude towards help-seeking behaviour and indifference to stigma. There was a significant difference in the psychological openness sub-scale, with the younger adults appearing more open. General practitioners, God, religious/spiritual leaders, and spouses/partners were favoured as first port-of-call for discussing mental health issues. The younger adults included psychologists as part of this list. There was no significant difference in the choice of first contact between those that had (28% of older and 70% of younger adults) or had not used mental health services before, and the majority experienced this help as positive.

CONCLUSION
This study challenges the notion that stigmatization of mental health illness is at the core of limited use of psychological and psychiatric services by the elderly in South Africa. Our findings indicate that the barrier to service utilization is psychological openness and challenges the South African mental health services to focus on the education of the lay public (spouses/partners) in the identification of psychiatric symptoms, to strengthen the expertise of general practitioners and to focus on empowering spiritual and religious leaders in dealing with mental health issues reported to them.

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ABSTRACT TITLE
Cyberbullying perpetration and victimisation among adolescent psychiatric patients at Lentegeur Hospital, South Africa

BACKGROUND/AIM
Cyberbullying is a new phenomenon that has emerged with the advent of the internet. The prevalence of cyberbullying is increasing. Research has shown that cyberbullying is associated with psychiatric co-morbidity. The primary aim of this study was to determine the prevalence of cyberbullying amongst adolescents attending the Lentegeur

Hospital CAMH. The secondary aim was to determine the DSM-5 psychiatric diagnoses associated with cyberbullying.

METHODOLOGY
This study was a cross sectional study with convenience sampling. The study included 97 participants recruited from in-patient and outpatient services. Participants were aged between 13-18 years and provided assent along with parental consent. Quantitative data was captured using a questionnaire. Descriptive and inferential analysis of the data was performed.

RESULTS
The overall prevalence rate of cyberbullying in this sample was 56.7%. The prevalence rates for perpetrator only was 6.2%, for victim only was 20.6% and for perpetrator victims was 29.9%. Females were more involved in all forms of cyberbullying. There was no significant association between cyberbullying and any psychiatric diagnoses, as the study was underpowered. The overall prevalence of cyberbullying based on the primary psychiatric diagnosis of major depressive disorder was 72.4%, schizophrenia 57.1% and attention-deficit/hyperactivity disorder (ADHD) 22%. The overall prevalence of cyberbullying based on secondary psychiatric diagnosis of substance use disorders was 75% and mild intellectual disability was 27.7%. Most patients with ADHD (n = 14, 77.8%) and autism-spectrum disorder (n = 3, 60%) were uninvolved in cyberbullying behaviour. The proportions of perpetrators only and victims only were highest amongst individuals with schizophrenia (n = 3, 21.4%) and bipolar affective disorder (n = 3, 50%), respectively. The cyberbullying acts most frequently reported by perpetrators and victims were insulting or being insulted by someone and sending or receiving embarrassing and hurtful messages. There was no significant difference between in- and outpatients with regards to perpetrating or being a victim of cyberbullying.

CONCLUSION
The high percentage of adolescents involved in cyberbullying suggests that it is a major problem in this population. More screening and treatment programmes need to be implemented to address this issue.

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ABSTRACT TITLE
Burnout and job satisfaction of nursing staff in a South African acute mental health setting

BACKGROUND/AIM
Psychiatric nurses are a fundamental component of the mental health care system in South Africa. However, high levels of burnout and job dissatisfaction amongst nursing staff have been associated with reduced empathy and quality of care, and poor service delivery. Stikland Psychiatric Hospital is a state psychiatric hospital situated in Bellville, Western Cape, South Africa, and provides all levels of psychiatric care to a large part of the Cape metro region. To our knowledge, no previous studies have examined burnout and job satisfaction amongst nurses in this setting. We assessed the relationship between burnout and job satisfaction amongst nursing staff at Stikland Psychiatric Hospital, Cape Town, South Africa.

METHODOLOGY
This cross-sectional study used the Copenhagen Burnout Inventory and the Job Satisfaction Survey to assess burnout and job satisfaction amongst 127 psychiatric nursing staff.

RESULTS
In this population of mostly female (83.5%) nurses, scores for personal, work-related and client-related burnout were relatively high, but job satisfaction was also high. Higher levels of burnout were significantly associated (Pearson linear correlation, r = -0.077, p = 0.01) with lower levels of job satisfaction. There were no significant associations between burnout/job satisfaction and gender, rank or years of experience.

CONCLUSION
If mental health service delivery is to be optimised, supportive or preventative structures should be implemented to reduce the prevalence of burnout in psychiatric nurses. This study adds to scarce local knowledge and provides information that can be used to inform the development of supportive strategies for psychiatric nursing staff in South Africa.

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ABSTRACT TITLE
Factors associated with deliberate self-harm methods among patients in a tertiary hospital in South Africa

BACKGROUND/AIM
Hospital-based research provides important insight into the burden of suicide behaviour and methods used in deliberate self-harm (DSH). The information on methods used in DSH may be useful to plan suicide-related intervention and prevention programmes. We aimed to investigate the socio-demographic and clinical factors associated with the methods used in DSH at a tertiary hospital in Cape Town, South Africa.

METHODOLOGY
Socio-demographic, clinical and treatment data were collected from 238 consecutive DSH patients

who presented for emergency department treatment at the hospital. Univariate analyses and logistic regression models were used to explore the associations between these variables and violent and non-violent methods of DSH.

RESULTS

Self-poisoning was the most common method of self-harm (80.3%, n=191). Prescription medication was the most common form of self-poison (57.6%, n = 137) while a large number of patients used the non-prescription medication paracetamol (40.9%, n = 54). In the bivariate regression analysis, male gender, stating that the reason for DSH was to escape a situation and history of substance use were associated with violent methods of DSH.

CONCLUSION

This study contributes to emerging literature on methods used in DSH in South Africa. There is an urgent need to improve monitoring of prescription medication commonly used in DSH. More research on the source of prescription medication and its relationship to DSH is needed in this context. Limiting the quantity and reviewing the packaging of paracetamol available in supermarkets may be an effective means of restriction that should be adopted in South Africa. This study underscores the need for increased collaboration between the Department of Social Development and the Department of Health in providing substance use interventions to high-risk population groups.

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ABSTRACT TITLE

Patients' attitudes and preferences towards oral and long acting injectable antipsychotics in KwaZulu-Natal, South Africa

BACKGROUND / AIM

Drug attitudes and preference to treatment may influence adherence and outcomes. There is limited literature on patients' drug attitudes to oral and long acting injectable (LAI) antipsychotic formulations in Africa.

Aim: To describe patients' attitudes and preferences towards oral versus LAI antipsychotic formulations and to explore factors influencing patients' drug attitudes towards their respective antipsychotic formulation at two psychiatric units in KZN, SA.

METHODOLOGY

A cross–sectional survey of adult patients receiving LAI and/or oral antipsychotics (N = 70) compared to those on oral antipsychotics only (N = 70) was conducted. A socio–demographic questionnaire and Drug Attitude Inventory scale (DAI–30) were used to assess patient drug formulation preference and drug attitudes.

RESULTS

96 (68%) of 140 participants preferred oral antipsychotic compared to LAI. 98 (70%) preferred their current medication formulation they were prescribed, at the time of the study. 132 (94.3 %) participants reported a positive drug attitude towards both oral and LAI antipsychotic formulations. 4 participants on LAI and 4 on oral had a score of zero or a negative DAI score. Factors associated with a poorer DAI score were divorced/widowed status (p = 0.01), lower income (p = 0.02), shorter duration of illness (p = 0.04) and a clinical diagnosis of schizophrenia versus schizoaffective or other psychotic disorders (p = 0.04) based on an adjusted regression model. Participants who were on formulations that matched their preference scored better on DAI compared to individuals with mismatch in use and preference (p = 0.01).

CONCLUSION

Drug attitude is influenced by several factors including matched medication use and personal preference and this should be considered to improve adherence. Further research in larger samples is required.

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ABSTRACT TITLE

Relevance of substance use as a predictor of clinical outcome in first-episode schizophrenia spectrum disorder patients over 24 months of treatment with flupentixol depot

BACKGROUND / AIM

Substance use is generally associated with an unfavourable course of illness in first-episode schizophrenia, including non-remission of psychopathology symptoms, higher rates of relapse and re-hospitalization, and poorer functioning. The aim of this study was to explore the influence of cannabis and methamphetamine use on

clinical and treatment outcomes in first-episode schizophrenia spectrum disorder patients over 24 months of assured antipsychotic treatment.

METHODOLOGY

The present longitudinal study included 123 minimally treated or antipsychotic-naive first-episode patients assessed over 24 months of treatment with flupentixol decanoate according to a standardized regimen. Time to relapse, visit-wise changes in psychopathology severity and overall functioning were compared between cannabis users (n = 41) and non-users (n = 82) stratified based on urine toxicology results.

RESULTS

While both cannabis users and methamphetamine users were more likely to relapse at any point over 24 months of treatment, neither cannabis nor methamphetamine use were significant predictors of relapse. However, methamphetamine use, and cannabis use time interaction effects were found on global psychopathology. Follow-up analyses indicated that while cannabis users had poorer social and occupational functioning scores at baseline, neither cannabis use nor the frequency of use was associated with poorer improvement in social and occupational functioning over the course of treatment. In contrast, methamphetamine use had a significant individual effect on social and occupational functioning scores, as well as the excitement-hostility and disorganised PANSS domains.

CONCLUSION

Since neither frequency of cannabis use nor methamphetamine use were predictors of relapse, neither substances are likely to be reliable predictors of overall treatment outcome. Although substance use still needs to be targeted to improve the functional outcomes of substance using patients, in particular for methamphetamine users, assured antipsychotic medication appears to be sufficient to attenuate symptomatology and relapse in substance-using patients.

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ABSTRACT TITLE

A factor analytic study of the Childhood Trauma Questionnaire-Short Form in an all-female South African sample with and without HIV infection

BACKGROUND/AIM

The Childhood Trauma Questionnaire-Short Form (CTQ-SF) is widely used around the world but no norms have been established for South African users of the CTQ. The CTQ has been employed in South Africa but not yet validated. The present study aims to address this gap. There is great need in both clinical and research settings for an assessment tool that adequately measures childhood trauma, a sensitive and challenging construct to measure.

METHODOLOGY

This study explores the psychometric properties of the CTQ-SF in an all-female cohort living with and without HIV infection in South Africa, the first study of its kind in this population. The CTQ-SF was administered to 314 women (170 HIV uninfected; 144 HIV infected) in Cape Town, South Africa. Internal consistency of the CTQ-SF was determined by Cronbach alpha coefficients. Using Lisrel, a confirmatory factor analysis (CFA) was performed, followed by an exploratory factor analysis (EFA) to explore an alternative factor structure model in this cohort.

RESULTS

For the group as a whole, the model fit was acceptable but not good. However, for the sub-sample of women living with HIV, the CFA revealed poor model fit. The EFA revealed a three-factor model, with mostly stable factor loadings for four of the five subscales. However, the Physical Neglect (PN) subscale cross loaded on two of the three factors.

CONCLUSION

Our findings revealed an alternative factor structure from the original model in this study cohort. The PN subscale does not have stable factor loadings and is not homogenous. The original instrument may therefore benefit from revision for use in this population. Measures such as the CTQ can be informative for preventative strategies in HIV-infected or at-risk youth and for clinical interventions aimed at mitigating the negative psychological sequelae of childhood maltreatment.

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ABSTRACT TITLE

The relationship between cognitive change and physical health and behavioural outcomes in a Ugandan cohort of adults living with HIV – a longitudinal study.

BACKGROUND/AIM

The burden of global HIV infection is largely found in the Sub-Saharan African region. It is important to better understand factors that improve health outcomes for People living with HIV/AIDS (PLWHA). Given increased access to and availability of more potent ART regimens, PLWHA today, who comply with treatment, have extended life expectancies approaching population norms. The present study sought to assess the association between changes in cognitive function and physical health and behavioural outcomes in a longitudinal Ugandan cohort of PLWHA. We believe that there are a paucity of longitudinal studies mapping cognitive impairment in HIV-infected populations on the African continent. In light of this, the present study aims to fill this gap.

METHODOLOGY

We investigated changes in cognitive function and physical health and behavioural outcomes (HIV disease progression, health-seeking behaviour, adherence to HIV medications and risky sexual behaviour) at baseline and 12 months later among 1126 Ugandan adults living with HIV.

RESULTS

Overall, cognitive function improved from baseline to follow-up, except for gait speed, which was slower at follow-up compared to baseline. There were improvements in physical health and behavioural outcomes by follow-up, with greater improvements among individuals on ART compared to those not on ART. Change in gait speed over time significantly predicted risky sexual behaviours at follow-up.

CONCLUSION

This is the first study to investigate the longitudinal relationships between cognitive function and health outcomes among Ugandan adults living with HIV and provide insights into the possible links between cognitive function and negative clinical and behavioural health outcomes in people living with HIV.

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ABSTRACT TITLE

Investigating Mental Health Literacy of PHC Practitioners in South Africa and Zambia: Phase 1 of the MEGA Project – Preliminary Findings from the Western Cape

BACKGROUND

A high prevalence and burden of psychiatric illness in childhood and adolescence suggests that primary health care (PHC) practitioners should routinely consider mental illness when assessing youth. However, common psychiatric disorders remain largely undetected and untreated in PHC settings, suggesting a need for greater awareness of these conditions. The MEGA project aims to identify gaps in PHC practitioner knowledge with regard to child and adolescent mental health in South Africa and Zambia, in order to provide training to address these gaps and develop a locally relevant mobile-health tool to screen for these problems. We assessed the mental health literacy and experiences of PHC nurses in managing child and adolescent psychiatric disorders.

METHODOLOGY

70 PHC nurses from 7 PHC clinics in Cape Town completed (i) a background questionnaire, which contained questions related to demographics, work experience, mental health knowledge and training, and resource availability; and (ii) the Mental Health Literacy Scale (MHLS). This is a 35-item questionnaire that can be used to assess mental health knowledge, attitudes toward mental health and help-seeking. Scores range between 35 and 160, with higher scores indicating more knowledge.

RESULTS

Participants were between 21 and 58 years of age, mostly female (87%), and had an average of 13.0 (± 10.0) years of experience. Although the majority (74%) were confident about where to obtain information pertaining to mental illness, only half (50%) reported ever receiving any mental health training. Participants reported seeing an average of 2 (±2.9) adolescents with suicidal thoughts or attempts and 9 (±26.9) who had experienced a traumatic event each month. The mean score on the MHLS was 127.3 (±12).

CONCLUSION

These findings suggest that PHC nurses would benefit from increased support with regard to managing mental health conditions. By identifying the needs of PHC practitioners in managing youth with common mental health problems, we hope to develop targeted training and a brief mental health screening tool that will aid in identifying youth in need of further attention. In this way we anticipate improved access to mental health services and enhanced mental health care for youth in South Africa and Zambia.

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ABSTRACT TITLE

The Val66Met brain-derived neurotrophic factor genotype does not predict PTSD treatment response in South African adolescents

BACKGROUND/AIM

Posttraumatic stress disorder (PTSD) is a psychiatric condition characterised by intrusive thoughts, avoidance behaviours, hypervigilance and cognitive deficits that may occur consequent to trauma exposure. Recent studies suggest that genetic predisposition plays an important role not only in the risk of developing psychiatric disorders, but also into the response to therapeutic interventions. The purpose of this study was to determine whether Val66Met, a functional variant in the brain-derived neurotrophic factor (BDNF) gene, predicts treatment response in adolescents with PTSD.

METHODOLOGY

We performed secondary analysis of data collected from 52 South African adolescents (70 % of Mixed-Ancestry) diagnosed with PTSD and examined the relationship between treatment response and Val66Met genotype. Study participants were randomly assigned to one of two intervention programs, either prolonged exposure therapy (PE) or supportive counselling (SC). DNA was extracted from saliva samples provided by each participant.

RESULTS

Genotyping was successfully performed on samples from 47 participants (PE, n = 22; SC, n = 25). PTSD symptom severity, as assessed by the Child PTSD Symptom Scale-Interview, improved significantly with treatment (p = 2.0 x 10-16). However, a repeated measures analysis of covariance, with Val66Met genotype as the between factor and time as the within factor, revealed no significant effect of genotype on treatment outcome.

CONCLUSION

The results of this study require replication in a larger study group that accounts for the multiple confounding factors affecting human genetic studies.

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ABSTRACT TITLE

Exploring mechanisms of effect in an in-patient psychotherapy program: mood and anxiety symptoms, difficulty with emotion regulation, and five facets of mindfulness

BACKGROUND

This exploratory enquiry into the effectiveness of an in-patient psychotherapy program measured the changes in mood and anxiety symptoms, difficulty with emotion regulation, and dispositional mindfulness in a clinical population with diverse psychiatric morbidity. Participants were 53 adults (74.5% female, mean age = 35 years) who participated in a 4-week in-patient psychotherapy program offering a variety of interventions, including mindfulness skills training, and Dialectical Behaviour Therapy-psychosocial skills training.

METHODOLOGY

A prospective cohort descriptive study, using an observational design with one-group, pre-test/post-test, and discrete outcomes, was conducted. This was an outcome assessment evaluation of an existing in-patient psychotherapy program delivered at a South African public sector tertiary-level psychiatric hospital. Program input data, demographic variables, psychiatric morbidity, and medication on discharge were tracked. Program outcomes were measured using the Mood and Anxiety Symptoms Questionnaire D-30, the Difficulty with Emotion Regulation Short-Form, and the Five Facets of Mindfulness Questionnaire.

RESULTS

There was an average improvement of 29.86 ± 20.56 on the Mood and Anxiety Symptoms Questionnaire-D30 and 12.43 ± 17.75 on the Difficulty with Emotion Regulation Scale-Short Form, indicating an improvement in mood and anxiety symptoms and difficulty with emotion regulation post-intervention. There was an average improvement of 17.6 ± 23.66 on the Five Facets of Mindfulness Questionnaire, indicating an increase in dispositional mindfulness post-intervention.

CONCLUSION

The overall results of this study show evidence of the effectiveness of the in-patient psychotherapy program. Attendance of the program resulted in improvements in mood and anxiety symptoms, difficulty with emotion regulation, and dispositional mindfulness. Differences in program outcomes and associations with demographic variables, psychiatric morbidity, and medication at discharge indicate that a nuanced approach to parcelling out the effects of program interventions is needed when considering a program effect theory.

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ABSTRACT TITLE

Self-identification, training, practices, and perceptions of collaboration with medical providers: A two-province comparison of South African Xhosa-speaking traditional healers

BACKGROUND

Given the widespread use of traditional medicine in treating common mental disorders, especially among low-income groups, it is important to explore the self-identification, training, and practices of traditional healers (THs). We aimed to (i) explore the specific practices of different THs; (ii) determine whether the type of healing influences type of patient seen in practice, the mode of diagnosis/treatment, and the willingness to refer to conventional hospitals; and (iii) determine whether THs' practices differ between two provinces in South Africa.

METHODOLOGY

A comparative analysis was undertaken of Xhosa-speaking traditional healers (N = 118; female n = 96; mean age = 54.10, SD = 13.57 years) from the Western (n = 50) and Eastern (n = 68) Cape provinces. Participants completed the Patient Health Questionnaire (PHQ-9), and a structured questionnaire with two open-ended questions that collected data on self-identification, province, mode of diagnosis/treatment, perceived working relationship with conventional hospitals, and the type of illness (physical or mental) treated.

RESULTS

Self-identification as a specific type of TH was significantly associated with the mode of diagnosis/treatment, and the type of illness treated. Spiritualists, male THs, and THs who were previously hospitalised for mental illness were more likely to treat mental illness. There was a statistically significant association between THs who had previously been hospitalised for illness and who perceived their relationship with conventional hospitals to be functional (i.e., working).

CONCLUSION

This article highlights the complex practices of Xhosa-speaking THs that should be taken into consideration in future research. Clearer operational definitions of the type of TH are needed. Collaboration between THs and mental health care professionals and services could be facilitated by focusing on male THs, spiritualists, and THs who have previously been hospitalised for mental illness at conventional hospitals.

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ABSTRACT TITLE

The combination of childhood trauma and neuropeptide Y single nucleotide polymorphisms influence anxiety sensitivity in South African adolescents

BACKGROUND/AIM

Anxiety sensitivity (AS) refers to a fear of the physical, social and psychological consequences of anxiety and is predictor of the development of anxiety disorders, the most prevalent class of psychiatric disorders. Previous research conducted by our group indicated that childhood trauma (CT) experience interacts with genetic predisposition to influence AS. We decided to expand this study to investigate whether genetic variation in two neuropeptides implicated in the stress response, neuropeptide Y (NPY) and pituitary adenylate cyclase-activating polypeptide receptor 1 (ADCYAP1R1), interact with CT to influence AS in a sample of South African adolescents.

METHODOLOGY

Methods: Nine hundred and fifty-one adolescents, of which 634 self-identified as Black, Xhosa-speaking and 317 self-identified as South African Coloured, were recruited from schools in and around Cape Town. All study participants completed a battery of clinical measures, including the Childhood Anxiety Sensitivity Index (CASI) and Childhood Trauma Questionnaire (CTQ), which were used to asses AS and CT experience respectively. DNA was extracted from saliva samples and used for to genotype four NPY single nucleotide polymorphisms (SNPs) and a single ADCYAP1R1 SNP. The associative and interactive effects of SNPs and CT on AS were examined by ethnicity (Black, Xhosa-speaking or South African Coloured) and gender. All statistical analyses were performed using the R programming language and an α value of 0.05 was used to determine statistical significance.

RESULTS

The interaction of CT and the NPY rs5574 A allele increased AS in Coloured female participants. The rs3037354 deletion variant protected against AS as CT scores increased in Coloured male participants. In Xhosa females, the NPY rs5573 A allele and rs3037354 deletion variant were associated with increased and decreased AS respectively.

CONCLUSION

These results suggest that the rs5574 A allele and rs3037354 deletion variant interact with CT to act as risk and protective factors respectively for AS in an ethnicity- and gender-specific manner. Our results reaffirm the role of gene-environment interactions in anxiety-related behaviours. The differences in genetic contributions to AS by ethnicity and gender reinforce the need for psychiatric genetics investigations in under-studied populations ■