CELEBRATES SCIENCE

MARCH 2017

Impact Factor: 6.103

Summary:

Background: Being diagnosed with Human Immunodeficiency Virus (HIV), and labelled with a chronic, life-threatening, and often stigmatizing disease, can impact on a person's well-being. Psychosocial group interventions aim to improve life-functioning and coping as individuals adjust to the diagnosis.

Objectives: To examine the effectiveness of psychosocial group interventions for improving the psychological well-being of adults living with HIV/AIDS.

Search Methods: We searched the following electronic databases up to 14 March 2016: the Cochrane Central Register of Controlled Trials (CENTRAL) published in the Cochrane Library (Issue 2, 2016), PubMed (MEDLINE) (1996 to 14 March 2016), Embase (1996 to 14 March 2016), and Clinical Trials.gov.

Selection Criteria: Randomized controlled trials (RCTs) or quasi-RCTs that compared psychosocial group interventions with versus control (standard care or brief educational interventions), with at least three months follow-up post-intervention. We included trials that reported measures of depression, anxiety, stress, or coping using standardized scales.

Data Collection and Analysis: Two review authors independently screened abstracts, applied the inclusion criteria, and extracted data. We compared continuous outcomes using mean differences (MD) with 95% confidence intervals (95% CIs), and pooled data using a random-effects model. When the included trials used different measurement scales, we pooled data using standardized mean difference (SMD) values. We reported trials that we could not include in the meta-analysis narratively in the text. We assessed the certainty of the evidence using the GRADE approach.

Main Results: We included 16 trials (19 articles) that enrolled 2520 adults living with HIV. All the interventions were multifaceted and included a mix of psychotherapy, relaxation, group support, and education. The included trials were conducted in the USA (12 trials), Canada (one trial), Switzerland (one trial), Uganda (one trial), and South Africa (one trial), and published between 1996 and 2016. Ten trials recruited men and women, four trials recruited homosexual men, and two trials recruited women only. Interventions were conducted with groups of four to
15 people, for 90 to 135 minutes, every week for up to 12 weeks. All interventions were conducted face-to-face except two, which were delivered by telephone. All were delivered by graduate or postgraduate trained health, psychology, or social care professionals except one that used a lay community health worker and two that used trained mindfulness practitioners. Group-based psychosocial interventions based on cognitive behavioural therapy (CBT) may have a small effect on measures of depression, and this effect may last for up to 15 months after participation in the group sessions (SMD -0.26, 95% CI -0.42 to -0.10; 1139 participants, 10 trials, low certainty evidence). Most trials used the Beck Depression Inventory (BDI), which has a maximum score of 63, and the mean score in the intervention groups was around 1.4 points lower at the end of follow-up. This small benefit was consistent across five trials where participants had a mean depression score in the normal range at baseline, but trials where the mean score was in the depression range at baseline effects were less consistent. Fewer trials reported measures of anxiety, where there may be little or no effect (four trials, 471 participants, low certainty evidence), stress, where there may be little or no effect (five trials, 507 participants, low certainty evidence), and coping (five trials, 697 participants, low certainty evidence). Group-based interventions based on mindfulness have not demonstrated effects on measures of depression (SMD -0.23, 95% CI -0.49 to 0.03; 233 participants, 2 trials, very low certainty evidence), anxiety (SMD -0.16, 95% CI -0.47 to 0.15; 62 participants, 2 trials, very low certainty evidence), or stress (MD -0.2, 95% CI -4.23 to 0.19; 137 participants, 2 trials, very low certainty evidence). No mindfulness based interventions included in the studies had any valid measurements of coping.

Authors' Conclusions: Group-based psychosocial interventions may have a small effect on measures of depression, but the clinical importance of this is unclear. More high-quality evidence is needed to assess whether group psychosocial intervention improve psychological well-being in HIV positive adults.
Director: Prof Dan Stein

Article:

DOI: 10.1016/j.euroneuro.2017.02.007

Impact Factor: 4.409

Summary:

Agomelatine is efficacious in reducing symptoms and preventing relapse in placebo-controlled trials in generalised anxiety disorder (GAD). Nevertheless, fixed dose studies of agomelatine in GAD have not been undertaken. To determine the minimally effective optimal dose of agomelatine in GAD, the efficacy of two doses of agomelatine (10 and 25mg/day) was investigated in a 12-week, placebo-controlled, double-blind, international study in patients with a primary diagnosis of GAD. The primary outcome measure was the Hamilton Anxiety scale (HAM-A). The study was undertaken in 35 clinical centers in Finland, Russia, Poland, Slovakia and Ukraine from August 2013 to January 2015. 131 out-patients were included in the agomelatine 10mg group, 139 in the agomelatine 25mg group, and 142 in the placebo group. Both doses of agomelatine were associated with significant decreases in the HAM-A at week 12 (difference versus placebo of 7.16±1.00 at 10mg and 11.08±0.98 at 25mg, p<0.0001). Significant effects on all secondary measures were found for both doses at week 12; including psychic and somatic HAM-A subscales, response rate, remission on the HAM-A, and functional impairment. Findings were confirmed in subsets of more severely ill patients on all endpoints. The low placebo response rate observed in this study was consistent with an increase in the quality of data collected. Agomelatine was well-tolerated by patients, with minimal distinctions from placebo. There was a dose effect of agomelatine, with a greater placebo-agomelatine difference in the agomelatine 25mg group, compared to the agomelatine 10mg group. The present data support early work indicating the efficacy and tolerability of agomelatine in the treatment of GAD.
Summary:
Energy use in low-income households in South Africa is considerably more hazardous than in middle to high-income households. Poverty is a key underlying factor. However, poor quality domestic energy technologies, including stoves, heaters and light sources contribute to this vulnerability. The problem is compounded by behavioural and environmental factors. Since cooking is a key energy-using chore, access to efficient, safe and versatile stoves portend safety improvements. This paper reports on a comparative analysis of eleven technological and usability attributes (CO emissions, firepower, efficiency, fuel toxicity, fuel cost, stove price, controllability, durability, availability, temperature of touchable-parts, and mechanical stability) of commercially available stoves that utilise four energy sources (kerosene, methanol, ethanol gel, and LPG). The ensuing discussion serves as a guide to enable the selection of the best-fit stove-fuel combination for low-income households. The findings indicate that LPG stoves have comparatively better overall rankings for cleanliness, firepower, safety, and durability. This analysis highlights that no combustion technology is risk-proof and there remains a burden on users to exercise diligence. We recommend that South Africa adopts an affirmative policy and strategic actions that discourage the use of kerosene as a household combustion fuel, and promotes the adoption of LPG as a safer and practical alternative.
Summary

Consistent reports indicate that hypertension is a particularly common finding in black populations. Hypertension occurs at younger ages and is often more severe in terms of blood pressure levels and organ damage than in whites, resulting in a higher incidence of cardiovascular disease and mortality. This review provides an outline of recent advances in the pathophysiological understanding of blood pressure elevation and the consequences thereof in black populations in Africa. This is set against the backdrop of populations undergoing demanding and rapid demographic transition, where infection with the human immunodeficiency virus predominates, and where under and over-nutrition coexist. Collectively, recent findings from Africa illustrate an increased lifetime risk to hypertension from foetal life onwards. From young ages black populations display early endothelial dysfunction, increased vascular tone and reactivity, microvascular structural adaptions as well as increased aortic stiffness resulting in elevated central and brachial blood pressures during the day and night, when compared to whites. Together with knowledge on the contributions of sympathetic activation and abnormal renal sodium handling, these pathophysiological adaptations result in subclinical and clinical organ damage at younger ages. This overall enhanced understanding on the determinants of blood pressure elevation in blacks encourages (a) novel approaches to assess and manage hypertension in Africa better, (b) further scientific discovery to develop more effective prevention and treatment strategies and (c) policymakers and health advocates to collectively contribute in creating health-promoting environments in Africa.

Summary

Aim: Therapy with low-dose amitriptyline is commonly used to treat painful diabetic peripheral neuropathy. There is a knowledge gap, however, regarding the role of variable CYP2D6-mediated drug metabolism and side effects (SEs). We aimed to generate pilot data to demonstrate that SEs are more frequent in patients with variant CYP2D6 alleles.

Method: To that end, 31 randomly recruited participants were treated with low-dose amitriptyline for painful diabetic peripheral neuropathy and their CYP2D6 gene sequenced.

Results: Patients with predicted normal or ultra-rapid metabolizer phenotypes presented with less SEs compared with individuals with decreased CYP2D6 activity.

Conclusion: Hence, CYP2D6 genotype contributes to treatment outcome and may be useful for guiding drug therapy. Future investigations in a larger patient population are planned to support these preliminary findings.
1. **INTRAMURAL RESEARCH UNITS**

**Alcohol, Tobacco and Other Drug**

   DOI: 10.3390/ijerph14040346
   **Impact Factor: 2.035**

   DOI: 10.1007/s40817-017-0035-2
   **Impact Factor: None**

   DOI: 10.1007/s10461-017-1758-x [Original]
   **Impact Factor: 3.063**

**Biomedical Research and Innovation Platform**

   DOI: 10.3390/molecules22040554
   **Impact Factor: 2.465**

   DOI: 10.1186/s12899-017-0030-y
   **Impact Factor: None**

**Centre for Tuberculosis**

   DOI: 10.1016/S2213-2600(17)30079-6
   **Impact Factor: 15.328**

   **Impact Factor: None**

   DOI: 10.1016/S2213-2600(17)30081-4
   **Impact Factor: 15.328**
Environment and Health
   DOI: 10.7196/SAMJ.2017.v107i4.12176
   Impact Factor: 1.500

Gender and Health
   DOI: 10.1002/14651858.CD010806.pub2
   Impact Factor: 6.103

   DOI: 10.9745/GHSP-D-16-00215
   Impact Factor: None

Health Systems
   DOI: 10.1016/j.jclinepi.2017.03.012
   Impact Factor: 4.703

   DOI: 10.1016/j.jclinepi.2016.03.034
   Impact Factor: 4.703

HIV Prevention
   DOI: 10.1097/OLQ.0000000000000568
   Impact Factor: 2.968

MRC Office of AIDS
   DOI: 10.1073/pnas.1703236114
   Impact Factor: 9.423
Non-Communicable Disease

   DOI: 10.1089/omi.2016.0180
   Impact Factor: 2.896

   DOI: 10.1017/S0029665117000283
   Impact Factor: 4.703

   DOI: 10.1186/s12992-017-0242-8
   Impact Factor: 2.540

   DOI: 10.1111/eji.12745
   Impact Factor: 2.687

   DOI: 10.1155/2017/1613657
   Impact Factor: 2.376
Impact Factor: 2.562

Impact Factor: 2.523

South African Cochrane Centre
Impact Factor: 2.209

Impact Factor: 1.500

Violence, Injury and Peace
Impact Factor: 3.045

Impact Factor: 1.500

Impact Factor: 1.500

Impact Factor: None

2. EXTRAMURAL RESEARCH UNITS
Antiviral Gene Therapy
Impact Factor: 5.228

**Impact Factor: 3.541**

### Anxiety and Stress Disorders


**Impact Factor: 3.582**


**Impact Factor: 4.409**


**Impact Factor: 5.228**


**Impact Factor: 6.500**


**Impact Factor: 4.704**


**Impact Factor: 3.540***
Impact Factor: 4.047

Developmental Pathways for Health
Impact Factor: 44.002

Impact Factor: 2.562

Impact Factor: 1.500

Hypertension and Cardiovascular Disease
Impact Factor: 5.062

Impact Factor: 2.833

Impact Factor: 5.062

Rural Public Health and Health Transition
Impact Factor: 1.606

**Impact Factor:** None


**Impact Factor:** 2.813

**Stem Cell Research and Therapy**


**Impact Factor:** 2.710


**Impact Factor:** 4.382

3. **GRANT FUNDED RESEARCH**

1. Giddey AD, de Kock E, Nakedi KC, Garnett S, Nel AJM, **Soares NC**, Blackburn JM. A temporal proteome dynamics study reveals the molecular basis of induced phenotypic resistance in Mycobacterium smegmatis at sub-lethal rifampicin concentrations. Scientific Reports. 2017 Mar 6; 7: 43858. [Original] DOI: 10.1038/srep43858

**Impact Factor:** 5.228


**Impact Factor:** 3.808


**Impact Factor:** 3.631
   DOI: 10.1186/s12916-017-0822-8 
   **Impact Factor: 8.005**

   DOI: 10.1007/s11936-017-0513-y 
   **Impact Factor: None**

   DOI: 10.1155/2017/9059523 
   **Impact Factor: 2.134**

4. **RESEARCH CENTRES**

**Soweto Matlosana SAMRC Collaborating Centre for HIV/AIDS and TB**

   DOI: 10.1371/journal.pone.0174097 
   **Impact Factor: 3.057**
5. RESEARCH UNITS WITH NO QUALIFYING PUBLICATIONS

**Intramural**
- Biostatistics
- Burden of Disease
- MRC Office of Cancer
- MRC Office of Malaria
- MRC Office of Tuberculosis

**Extramural**
- Bioinformatics Capacity Development
- Child and Adolescent Lung Health
- Common Epithelial Cancer
- Diarrhoeal Pathogens
- Drug Discovery and Development
- Gynaecological Cancer
- Health Services to Systems
- Herbal Drugs
- HIV/TB Pathogenesis and Treatment
- Human Genetics
- Immunology of Infectious Disease
- Maternal and Infant Health Care Strategies
- Medical Imaging
- Microbial Water Quality Monitoring
- Molecular Mycobacteriology
- Prospective Gastrointestinal Cancer
- Receptor Biology
- Respiratory and Meningeal Pathogens
## 6. GRANTS AWARDED

<table>
<thead>
<tr>
<th>SAMRC Unit</th>
<th>Funder</th>
<th>Main Funder</th>
<th>Project Title/Description</th>
<th>Contract Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biostatistics</td>
<td>Tufts University</td>
<td>USAID</td>
<td>Nutrition Capacity Development to Meet National Priorities – Amendment 1</td>
<td>349 957 Rand</td>
</tr>
<tr>
<td>BRIP</td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>The role of beta secretases in pancreatic beta cell inflammation and ageing</td>
<td>120 000 Rand</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Epigenetic modulation of an aspalathin-enriched South African Indigenous plant extract</td>
<td>710 000 Rand</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Interaction of Aspalathus linearis (rooibos) with glucose lipid lowering medications</td>
<td>87 000 Rand</td>
</tr>
<tr>
<td>Burden of Disease</td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>Evaluation of Availability and Quality of morbidity data in routine records in hospitals</td>
<td>590 640 Rand</td>
</tr>
<tr>
<td>Corporate Communications</td>
<td>Department of Science &amp; Technology</td>
<td>Department of Science &amp; Technology</td>
<td>Developing an Integrated Communication and Marketing Plan for the BIO-Economy</td>
<td>2 000 000 Rand</td>
</tr>
<tr>
<td>Environment &amp; Health</td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>IK and poisonous plats</td>
<td>233 187 Rand</td>
</tr>
<tr>
<td>GIPD</td>
<td>Department of Science &amp; Technology</td>
<td>Department of Science &amp; Technology</td>
<td>For inclusion of the South African Network of Health and Demographic Surveillance Sites (HDSS) in the implementation of the first edition of the South</td>
<td>99 000 000 Rand</td>
</tr>
<tr>
<td>Health Systems</td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>UHCASA – Achieving Universal HIV coverage among children and Adolescents in South Africa</td>
<td>111 105</td>
</tr>
<tr>
<td>HIV Prevention</td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>Community screening for diabetes and hypertension leveraged on HIV Testing to enhance linkage</td>
<td>199 345</td>
</tr>
<tr>
<td>Non-Communicable Disease</td>
<td>Centre for Development Innovation (CDI) Wageningen</td>
<td>Centre for Development Innovation (CDI) Wageningen</td>
<td>SPAR Nutrition Survey</td>
<td>138 189</td>
</tr>
<tr>
<td></td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>Diabetic cardiomyopathy Risk Prediction</td>
<td>120 000</td>
</tr>
<tr>
<td></td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>The development of a Diabetes Prevention focused Community Health Workers training model for the south African Community</td>
<td>87 000</td>
</tr>
<tr>
<td></td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>Beneficial effects of aspalathin in fatty liver accumulation and histological changes</td>
<td>120 000</td>
</tr>
<tr>
<td></td>
<td>National Research Foundation (NRF)</td>
<td>National Research Foundation (NRF)</td>
<td>Investing microRNA’s as biomarkers for gestational diabetes</td>
<td>170 000</td>
</tr>
</tbody>
</table>