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# HIV-Associated Neuropsychiatric Disorders

**AWACC 2017**

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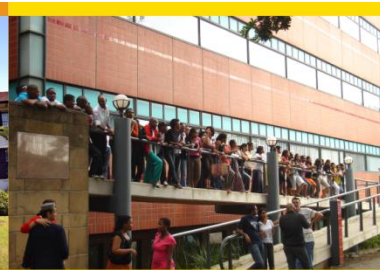
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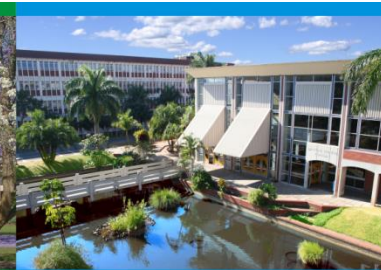
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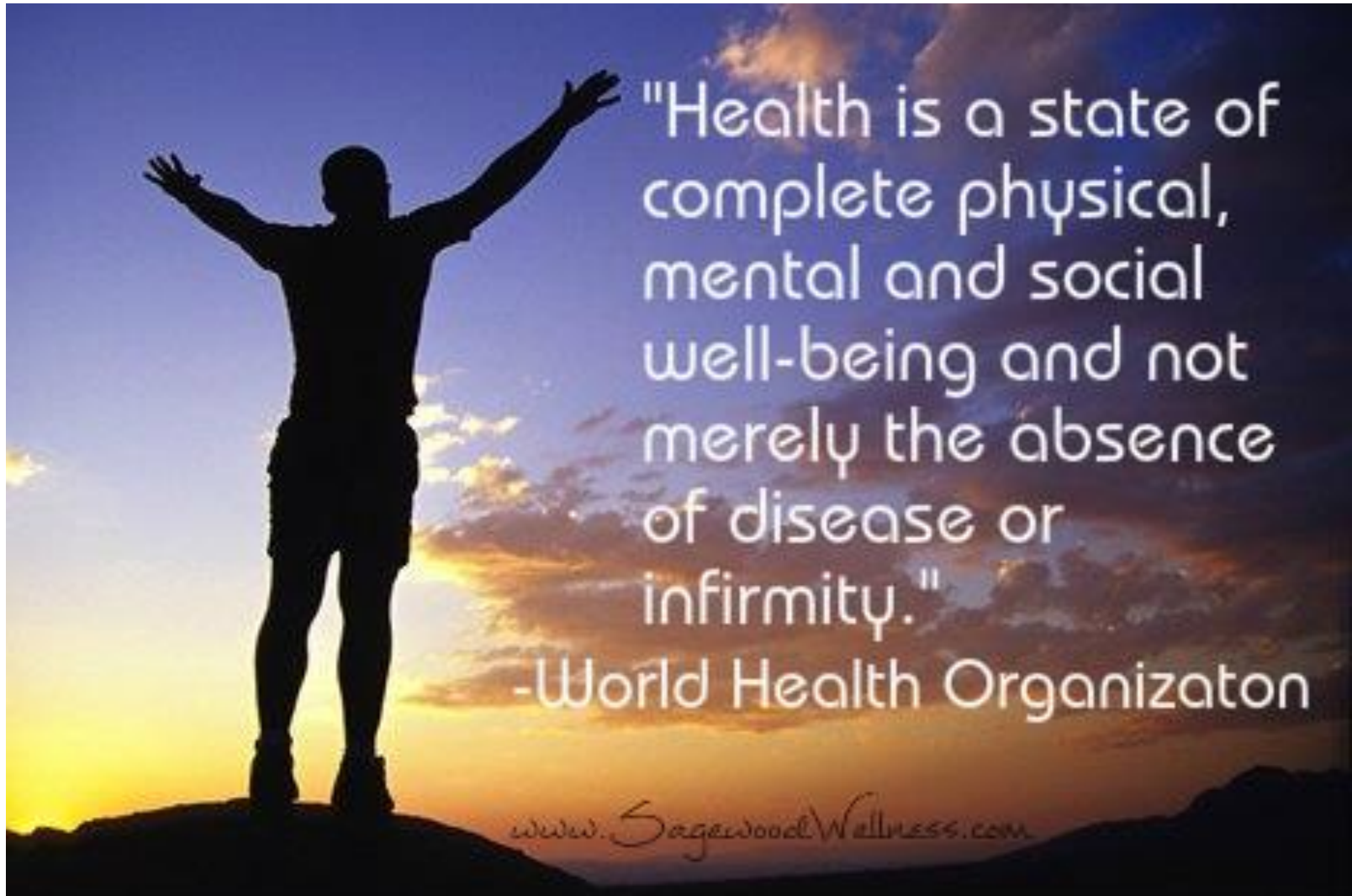
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UKZN INSPIRING GREATNESS

# From treating diseases to treating people !



"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."

-World Health Organization

[www.SageWoodWellness.com](http://www.SageWoodWellness.com)

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# **‘No health without mental health’**

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**HIV**



**MENTAL ILLNESS**

- **Neurotropic virus**
- **Biopsychosocial sequelae**
- **Cause, course and outcome influenced by ‘brain’ factors.**

# **Spectrum of psychiatric disorders in HIV**

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**NB! Neurologic and cognitive disorders not included**

- **Pre-existing MI/co-morbid**
- **Natural/complicated grief responses to diagnosis of a terminal illness**
- **Psycho-social-spiritual reactions to disability/ illness**
- **New psychiatric symptoms/syndromes due to illness or ART**
- **Neuropsychiatric manifestations of HIV**

**GUIDELINE****Management of mental health disorders  
in HIV-positive patients**

by the Southern African HIV Clinicians Society

G Jonsson (Chair), N Davies, C Freeman, J Joska, S Pahad, R Thom, K Thompson, N Woollett (Panel Members),  
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**Disclaimer.** Specific recommendations provided in this document are intended only as a guide to clinical therapy, based on expert consensus and best current evidence. Treatment decisions for patients should be made by their responsible clinicians, with due consideration for individual circumstances. The most current version of this document should always be consulted.

These guidelines are intended as a reference document to assist HIV nurse and doctor clinicians in managing mental health disorders. It is intended to improve awareness, knowledge and capacity to support patients living with HIV and mental health disorders.

*S Afr J HIV Med* 2013;14(4):155-165. DOI:10.7196/SAJHIVMED995

# Psychiatric disorders

- **20-60% of PLWHA affected by psychiatric disorder**
- **Common mental disorders (CMD)**
  - **Depression, anxiety, substance use disorders**
  - **12% in general population vs 26-38% in PLHWA**
  - **NO decrease in CMD with introduction of ART**
  - **Often undiagnosed and untreated in PLWHA**
  - **Prevalence influenced by virus in CNS, psychosocial stressors, life-threatening stigmatized illness**
- **Severe mental disorders (SMD)**
  - **Schizophrenia**
  - **Bipolar mood disorder**
  - **Major depression with psychotic features**

## Box 5. Prevalence and impact of SMDs

### Prevalence

- HIV among those with SMDs: 2.6 - 59.3% in sub-Saharan Africa<sup>[8]</sup>
- SMDs in the HIV-positive population: up to 15%
- New-onset psychosis among the HIV-positive population: 0.2 - 15.2%<sup>[16]</sup>

### Impact

- SMDs lead to an increased risk of acquiring and transmitting HIV
- SMDs may impact adherence to psychiatric treatment and ART
- HIV disease progression can be associated with secondary psychiatric disorders, which often improve with ART
- **Integrated care of both conditions improves outcomes<sup>[7]</sup>**
- **Successful ART is more likely if there is:**
  - **no substance abuse**
  - **no history of homelessness/incarceration**
  - **retention in psychiatric care**
  - **adherence to psychiatric treatment<sup>[16]</sup>**
- Regular mental health visits decrease the risk of ART discontinuation

# Depression and HIV

- **25% of PLWHA**
- **MDD: 5-10%**
- **Minor depression: 15-20%**
- **2-3 x higher than general population**

***SO WHAT?***

- **Disease progression**
- **Reduced adherence to ART**
- **Reduced QOL**
- **Greater health care usage**

**Despite all of the above: under-recognized,  
underdiagnosed, undertreated**

# Mechanisms

- **Increased depression in HIV high risk populations e.g. SA**
- **Major depression: impaired behaviour/judgment, substance abuse, self-defeating/destructive behaviours, relationships=risk for HIV infection**
- **Depression linked to disease progression and mortality: 2.5 x increase in rates of depression as CD4 counts drop below 200 cells/mm<sup>3</sup>**
- **HIV on brain: increases risk for depression**
- **Psychosocial: chronic stress, stigma, social isolation, bereavement, debilitation, demoralization**

# Depression screening tools

Over the past 2 weeks how often have you been bothered by any of the following problems	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed or hopeless	0	1	2	3
3. Trouble falling or staying asleep; or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself for that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things such as reading the newspaper or watching TV	0	1	2	3
8. Moving or speaking so slowly that others could have noticed. Or the opposite - being so fidgety and restless that you have been moving around a lot more than usual	0	1	2	3

Over the past 2 weeks how often have you been bothered by any of the following problems	Not at all	Several days	More than half the days	Nearly every day
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
Add columns				
Total				
0 - 4: No depression				
5 - 9: Mild depression				
10 - 14: Moderate depression				
15 - 19: Moderately severe				
20 - 27: Severe				
	Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
If you checked any of the problems, how difficult have these problems made it for you to do work, take care of things at home, or get along with other people				

**Total score:**

Total score	Depression severity
0 - 4	No depression
5 - 9	Mild depression
10 - 14	Moderate depression
15 - 19	Moderately severe depression
20 - 27	Severe depression

Fig. 2. Patient Health Questionnaire (PHQ)-9.

# Depression screening tools

S	Sex: male gender represents a higher risk
A	Age: extremes of age are at higher risk (e.g. <18 years and >55 years)
D	Depression or other psychiatric comorbidity are at higher risk
P	Previous attempts: those with a past history of [suicide] attempts are at higher risk
E	Ethanol/alcohol or other substance use/abuse
R	Rational thinking loss, e.g. psychosis with command hallucinations
S	Social support: no social support confers a higher risk
O	Organised plan
N	No spouse
S	Sickness: medical or psychiatric illness may confer a higher risk
<b>Score card</b>	
0 - 2 points	This patient may be sent home but one needs to ensure follow-up in the future
3 - 4 points	Close follow-up needs to be ensured and hospitalisation considered
5 - 6 points	Hospitalisation is strongly considered
7 - 10 points	Ensure hospitalisation and consider involuntary admission if necessary

Fig. 3. 'SAD PERSONS' scale (yes for any letter = 1 point).

# SUICIDE

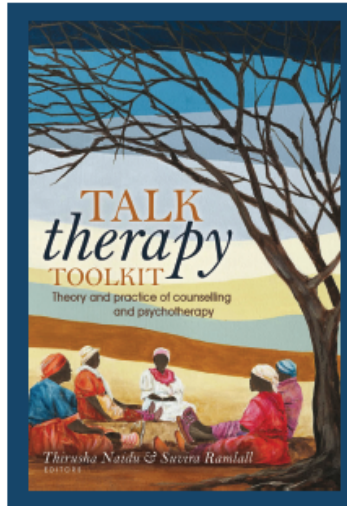
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- **Prof Schlebusch**
- **In depressed and non-depressed individuals**
- **Risk assessment**
- **Risk management: prevention and treatment**

# Treatment of depression

- **Holistic approach**
- **Optimize physical health**
- **Mild: psychosocial and lifestyle**
- **Moderate-severe:**
  - **Antidepressant**
    - **Start low, go slow**
    - **Titrate slowly over 4-6 weeks until response achieved**
    - **Hospitalize /refer if psychotic; moderate-high suicide risk**
  - **Counselling and psychotherapy**

# Counselling & Psychotherapy



Title: Talk therapy toolkit  
Subtitle: Theory and practice of counselling and psychotherapy  
Editors: Thirusha Naidu & Suvira Ramlall  
ISBN: 978-0-627-03410-7; R599.00  
eISBN: 978-0-627-03411-4; R539.10  
Publication date: October 2016  
Number of pages: 448

*Talk therapy toolkit* addresses the unique and diverse social and cultural characteristics of the South African milieu. This collaboration between psychology and psychiatry delivers a resource that reflects the reality faced by health care professionals in their working environment.

Through the development of increasingly complex human social groups, social and economic changes and challenges, industrialisation, technological advancement, global mobility and electronic communication, a significant gap of care has emerged. The erosion of the intimate social support systems that originally nurtured, protected and developed the human psyche,

has necessitated the emergence of various talk therapies as alternative forms of psychosocial and emotional support. *Talk therapy toolkit* is a practical and accessible text aimed at introducing emergent practitioners to the theory, techniques and practice of counselling and psychotherapy.

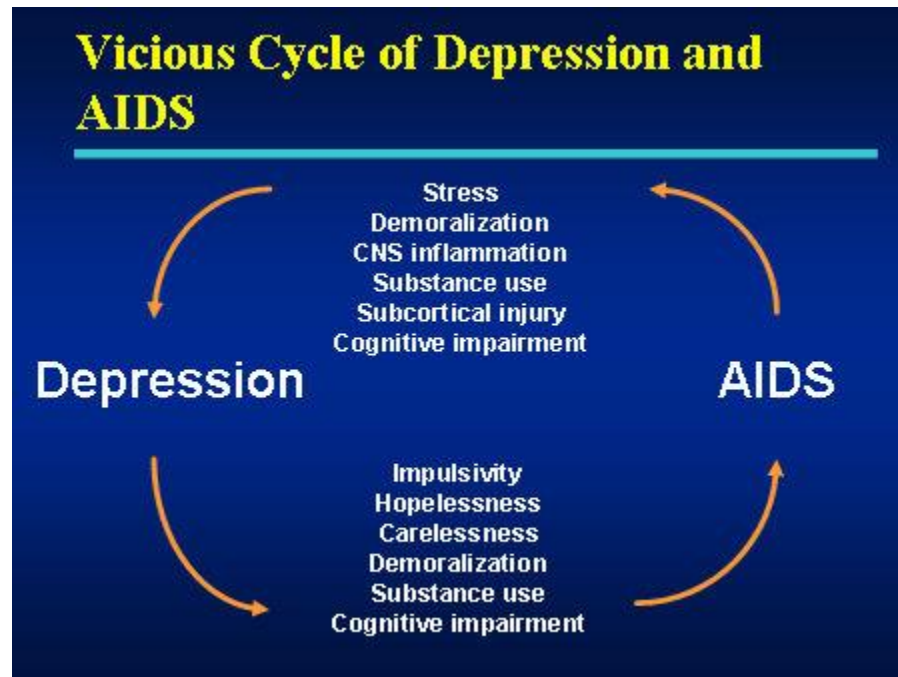
*Talk therapy toolkit* may be used to apply counselling and psychotherapy tools to promote the development of people in various contexts, ranging from healthcare and coaching to the workplace and beyond. Features include illustrative composite case studies and examples from the South African context, learning objectives and practical suggestions on the application of core principles and practices. Chapters on spirituality and neuroscience in psychotherapy will appeal to advanced practitioners and offer beginners a comprehensive overview.

Contents include the following:

- Basic counselling skills
- Supportive psychotherapy
- Grief, trauma and crisis counselling
- Psychodynamic therapy
- Cognitive behavioural therapy
- Narrative therapy
- Motivational interviewing
- Group therapy

*Talk therapy toolkit* is aimed at beginner therapists, psychologists, psychiatrists, social workers, counsellors, coaches and nurses and health care professionals working in the South African context.

# If in doubt, TREAT!



# **Assessment & treatment of psychiatric disorders in PLWHA**

- **Thorough assessment: history, physical, MSE, investigations**
- **Psychiatric history:**
  - **Predates onset of HIV**
  - **New onset psychiatric disorder: BPS aetiology**
  - **Psychiatric disorder associated with medical condition/complications, medication or substance use**
- **Choice of drug: tolerability, side-effects, interactions, adherence, regime**
- **Interactions: risk-benefit**
- **Psychosocial interventions: healthy diet & lifestyle important in improving physical health, mood, cognition; risk reduction**



## FORUM

## Psychotropic prescribing in HIV

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**Disclaimer.** Drug profiles, adverse effects and drug-drug interactions have been shortened to include the most common or serious, and are not intended to be exhaustive.

Psychiatric disorders frequently co-occur with HIV, as preceding conditions or consequent to HIV infection. This potentially compromises HIV diagnosis and antiretroviral (ARV) treatment adherence. We provide a brief guide to the diagnosis and treatment of common mental disorders in people living with HIV/AIDS, including: prescribing psychotropics in HIV; neuropsychiatric side-effects of ARVs and other medications commonly prescribed in HIV; and the diagnosis and treatment of depression, anxiety, psychosis, agitation, sleep disturbance, pain, and mania. Psychotropic treatments recommended were drawn primarily from those available in the public sector of South Africa.

*S Afr J HIV Med* 2012;13(4):194-188. DOI:10.7196/SAJHIVMED.863

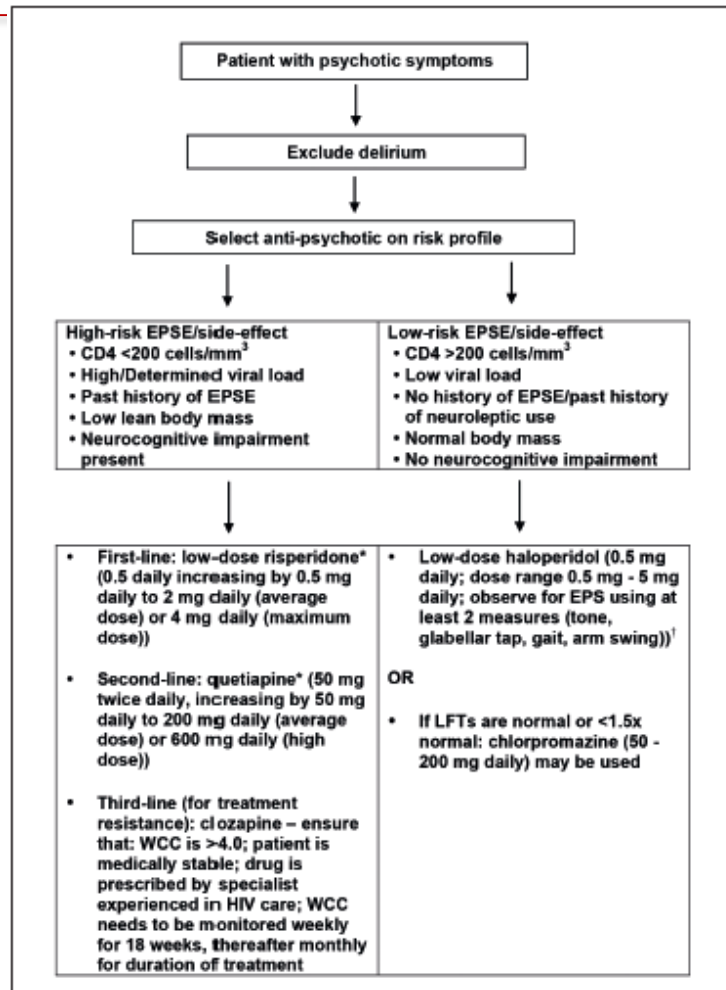


Fig. 1. Decision tree for initiating appropriate anti-psychotic treatment for psychosis in HIV-infected individuals. EPSE = extra-pyramidal side-effects; WCC = white cell count; LFTs = liver function tests.

\*Risperidone and quetiapine may be initiated ONLY by a psychiatrist.

<sup>1</sup>Depot medications are not contra-indicated. Consider a zuclopenthixol depot if clinically indicated; use a test dose of 50 - 100 mg, and repeat in 1 week. Thereafter, the depot can be administered monthly.

**Table 2. Side-effects, drug interactions and advantages of concurrent SSRI use with ART**

Agent	Dose	Side-effects	Drug interactions <sup>8,9</sup>	Notes
Fluoxetine	20 - 60 mg/day	Nausea, dyspepsia, abdominal pain, anxiety (especially in first 10 days), headache, tremor, sexual dysfunction, hyponatraemia, insomnia and agitation	<ul style="list-style-type: none"> <li>• LPV/r: may increase fluoxetine levels – increased risk of serotonin syndrome</li> </ul>	<ul style="list-style-type: none"> <li>• Advantages: low cost, available at most centres</li> <li>• Agitation can be a big problem in the first few days: adequate explanation and reassurance can reduce impact</li> <li>• Safe in overdose</li> </ul>
Citalopram	20 - 60 mg/day	As for fluoxetine	<ul style="list-style-type: none"> <li>• Not a potent inhibitor of most cytochrome-P450 enzymes: few drug interactions</li> <li>• Use with caution with NSAIDs/ warfarin</li> </ul>	<ul style="list-style-type: none"> <li>• Advantage over fluoxetine: starting dose can be halved (10 mg), and fewer drug interactions</li> <li>• Safe in overdose</li> </ul>

LPV/r = lopinavir/ritonavir; SSRI = serotonin selective re-uptake inhibitor; NSAIDs = non-steroidal anti-inflammatory drugs.

**Table 3. Side-effects, drugs interactions and advantages of concurrent TCA use with ART**

Agent	Dose	Side-effects	Drug interactions <sup>8,9</sup>	Notes
Amitriptyline	25 - 150 mg/day (usually taken at night)	<ul style="list-style-type: none"> <li>• Dry mouth, blurred vision, constipation, urinary retention, sedation, arrhythmia</li> <li>• Contra-indicated if myocardial infarct in preceding 6 months, cardiac conduction abnormalities or prostatism</li> </ul>	RTV: increases levels and thereby the antimuscarinic effects of amitriptyline (reduce the dose)	<ul style="list-style-type: none"> <li>• Lethal in overdose: not suitable for patients at risk of suicide</li> <li>• Dry mouth can be a problem with oral candida</li> <li>• Usual dose of 25 mg for insomnia or pain is often <b>not</b> sufficient as an antidepressant – may need &gt;3 tablets</li> <li>• Useful if sedation/analgesia is required</li> </ul>
Imipramine	75 - 150 mg/day	As for amitriptyline, but less sedating		

TCA = tricyclic antidepressant; RTV = ritonavir.

# Children and Adolescent PLWHA

GUIDELINE



## GUIDELINE

# Management of mental health disorders and central nervous system sequelae in HIV-positive children and adolescents

By the Southern African HIV Clinicians Society

R Nassen, K Donald, K Walker, S Paruk, M Vujovic, W Duncan, B Laughton, B Moos (*panel members*)

B Eley, A Lachman, J Wilmschurst (*reviewers*)

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**Disclaimer.** Specific recommendations provided here are intended as only a guide to clinical therapy, based on expert consensus and best current evidence. Treatment decisions for patients should be made by their responsible clinicians, with due consideration for individual circumstances. The most current version of this document should always be consulted.

HIV-positive children and adolescents are at increased risk of both central nervous system (CNS) sequelae and mental disorders owing to a number of factors, including the impact of HIV infection on the brain, social determinants of health (e.g. poverty and orphanhood) and psychosocial stressors related to living with HIV. Every effort should be made to identify perinatally HIV-infected children and initiate them on antiretroviral therapy early in life. HIV clinicians should ideally screen for mental health and neurocognitive problems, as part of the routine monitoring of children attending antiretroviral clinics. This guideline is intended as a reference tool for HIV clinicians to support the early identification, screening and management of mental health disorders and/or CNS impairment in children and adolescents. This guideline covers mental disorders (section 1) and HIV-associated neurocognitive disorders (section 2) among children and adolescents.

*S Afr J HIV Med* 2014;15(3):81-96. DOI:10.7196/SAJHIVMED.1091

**Table 1. Validated screening tools for mental disorders in children and adolescents\***

Screening instrument	Clinical condition	Source
SDQ (available in English, Afrikaans, Xhosa and Zulu)	Psychosocial functioning	<a href="http://www.sdqinfo.org/py/sdqinfo/b0.py">http://www.sdqinfo.org/py/sdqinfo/b0.py</a>
Conner's scales (parent, teacher)	ADHD	<a href="http://www.doctorrudy.com/files/teacher_add_adhd_short.pdf">http://www.doctorrudy.com/files/teacher_add_adhd_short.pdf</a> <a href="http://www.doctorrudy.com/files/add_adhd_parent_long.pdf">http://www.doctorrudy.com/files/add_adhd_parent_long.pdf</a>
SNAP-IV rating scale	ADHD	<a href="http://www.adhd.net/snap-iv-form.pdf">http://www.adhd.net/snap-iv-form.pdf</a>
Subscale of SDQ	Depression	<a href="http://www.sdqinfo.org/py/sdqinfo/b0.py">www.sdqinfo.org/py/sdqinfo/b0.py</a>
Paediatric symptom checklist	Psychosocial function	<a href="http://www.brightfutures.org/mentalhealth/pdf/professionals/ped_symptom_chklist.pdf">http://www.brightfutures.org/mentalhealth/pdf/professionals/ped_symptom_chklist.pdf</a>
SCARED	Anxiety	<a href="http://www.psychiatry.pitt.edu/sites/default/files/Documents/assessments/SCARED%20Child.pdf">http://www.psychiatry.pitt.edu/sites/default/files/Documents/assessments/SCARED%20Child.pdf</a> <a href="http://www.psychiatry.pitt.edu/sites/default/files/Documents/assessments/SCARED%20Parent.pdf">http://www.psychiatry.pitt.edu/sites/default/files/Documents/assessments/SCARED%20Parent.pdf</a>

SDQ = Strengths and Difficulties Questionnaire; ADHD = attention deficit hyperactivity disorder; SNAP-IV = Swanson, Nolan and Pelham, 4th revision; SCARED = Screen for Child Anxiety-Related Disorders.

\* Consult the relevant International Academy of Child and Adolescent Psychiatry and Allied Professions (IACAPAP) book chapter, which provides an overview of clinical assessment of a child: <http://iacapap.org/wp-content/uploads/A.5-CLINICAL-EXAMINATIONS-072012.pdf>

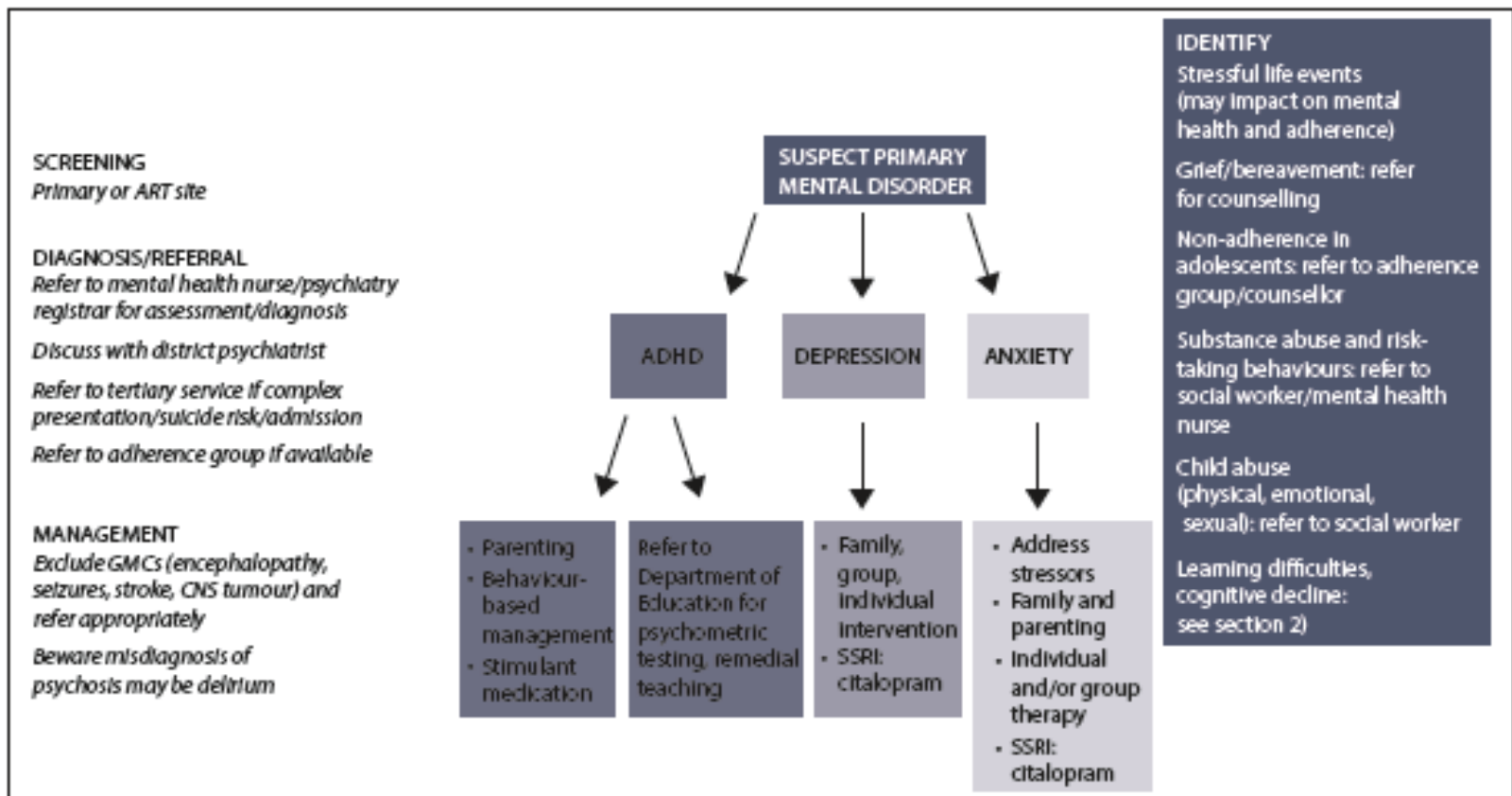


Fig. 1. Recognising primary mental disorders in HIV-positive children and adolescents. (ART = antiretroviral therapy; ADHD = attention deficit hyperactivity disorder; GMCs = general medical conditions; CNS = central nervous system; SSRI = selective serotonin re-uptake inhibitor.)

**Table 7. Commonly used psychotropic medications and their interactions\***

Class	Drug	Possible side-effects	Possible drug interactions
SSRIs	Fluoxetine	Headache, nausea/vomiting, behavioural activation	Potential increase in efavirenz levels
	Citalopram	Headache, nausea/vomiting	-
Antipsychotics			
FGAs	Haloperidol	EPSEs (dystonia, tremor, akathisia, cogwheeling, bradykinesia), neuroleptic malignant syndrome	-
SGAs	Risperidone	EPSEs at higher doses, sedation, weight gain, metabolic syndrome	Possible interactions with protease inhibitors
	Olanzapine	Sedation, metabolic syndrome, CVS side-effects	Probable interactions with protease inhibitors
	Clozapine	Best to avoid without specialist support	Probable interactions with protease inhibitors
Mood stabilisers	Lithium carbonate	Toxicity, which may be life threatening	Avoid with tenofovir
	Sodium valproate	Sedation, thrombocytopenia, toxicity	-
	Lamotrigine	Stevens-Johnson syndrome	Possible interactions with protease inhibitors

SSRIs = selective serotonin re-uptake inhibitors; FGAs = first-generation antipsychotics; EPSEs = extrapyramidal side-effects; SGAs = second-generation antipsychotics; CVS = cardiovascular.

\* Source: <http://www.druginteractions.org>

**Table 12. Psychosocial interventions for children**

Support groups	Psychotherapy	Counselling
<ul style="list-style-type: none"><li>• Groups need to be tailored to the child's age and stage of development, e.g. with younger children play can be combined with opportunities to learn about healthy living</li><li>• Older children can benefit from experiential activities across a range of health-related topics</li><li>• Useful to allow parents and caregivers to talk about their own fears, frustrations and challenges</li><li>• Can address difficulties with disclosure. Secrecy can affect the mental health of both child and parent/caregiver</li><li>• Provides a forum for education, correction of misconceptions and skills building</li><li>• Useful for building parenting skills that can help caregivers to develop effective communication skills, set limits and discipline appropriately</li></ul>	<ul style="list-style-type: none"><li>• Different types of psychotherapy are available to address a wide range of issues ranging from separation anxiety and learning or school problems to excessive shyness and low self-esteem. The choice of therapy will depend on the age and stage of the child's development</li><li>• In particular, younger children may benefit from play therapy where the use of play materials such as toys and puppets encourage children to talk about their feelings in order to better understand and cope with their difficulties</li></ul>	<ul style="list-style-type: none"><li>• The participation of children is an important aspect of counselling but is easily overlooked. Children may also be shut out of conversations because they have not been told their status</li><li>• Providing the opportunity to talk about matters that concern them with someone who is empathic, supportive and non-judgemental is important</li><li>• The following counselling approaches may be useful:<sup>(14)</sup><ul style="list-style-type: none"><li>• Get down to the child's eye level</li><li>• Speak softly and directly to the child</li><li>• Smile and play</li><li>• Be honest and patient</li><li>• Allow and respect normal emotions</li><li>• Start with the least invasive activities</li><li>• Give the child choices, e.g. would s/he like juice or water with medication</li><li>• Engage the child, e.g. talk about hobbies, friends and so on</li><li>• Support the parent-child relationship.</li><li>• Sit close to the child</li></ul></li></ul>

**Table 13. Psychosocial interventions for adolescents**

Support groups	Psychotherapy	Counselling
<ul style="list-style-type: none"><li>• Three main types of groups<ul style="list-style-type: none"><li>• Educational</li><li>• Social and emotional support</li><li>• Peer-led</li></ul></li><li>• Cost- and time-effective in a busy clinic</li><li>• Provide a safe space for young people to talk about personal issues, share similar challenges, discuss aspects of treatment (e.g. adherence), explore coping strategies and build a social network</li><li>• Can involve novel and interesting ways to achieve a specific goal, e.g. music, dance, drama, art or storytelling groups</li><li>• Important to understand developmental stage to ensure that groups meet the particular concerns of different age bands, e.g. discussions about puberty (young adolescents), or sexual and reproductive health issues (older adolescents)</li><li>• Support groups conducted for parents and caregivers are important and provide emotional support for carers, opportunities for discussing parenting challenges and fostering communication skills to build positive family relationships</li></ul>	<ul style="list-style-type: none"><li>• The most common types of psychotherapy are cognitive behavioural therapy, and interpersonal and psychodynamic psychotherapy<sup>[17,18]</sup></li><li>• Cognitive behavioural therapy uses techniques to correct distortions of thinking that are seen in emotional disorders</li><li>• Interpersonal psychotherapy is a brief, time-limited treatment based on the premise that depression occurs in the context of relationships. It covers four general areas of difficulty: grief, conflict in significant relationships, difficulties adapting to changes in relationships or life circumstances, and problems stemming from social isolation</li><li>• Psychodynamic psychotherapy is a 'talk therapy' for adolescents based on understanding issues that are behind a young person's behaviour, thoughts and feelings. Not all young people benefit from this form of therapy and assessment for suitability is required</li><li>• Other types of psychotherapy include family therapy, which aims to explore patterns of communication in families and to support and educate, and dialectical behaviour therapy, which is useful with older adolescents with chronic suicidal feelings or thoughts</li></ul>	<ul style="list-style-type: none"><li>• May involve obtaining advice or exploring a personal or social problem</li><li>• Positive change more likely in a relationship of trust where confidentiality is maintained. Building trust takes time and is greatly facilitated when the adolescent is able to see the same person at each visit</li><li>• Different types of counselling include grief, substance abuse and adherence counselling</li><li>• Adherence counselling is a form of psychosocial support that is concerned with the identification of effective strategies to promote adherence to antiretroviral treatment. Its aim is to enhance the ability of young people to take their treatment as prescribed. It is a process that includes preparation, treatment initiation, consolidation and maintenance</li></ul>

# The 'greying' of the HIV epidemic

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- **Increased lifespan of PLWHA**
- **Metabolic and cognitive changes related to ageing**
- **Deleterious neurocognitive effects potentiated by age**
- **Increased depression**
- **?Increased substance abuse**
- **Special needs of this population need to be planned for**

# Bereavement

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- **Actual and anticipatory**
- **Normal reaction but may be complicated**
- **Bereavement associated with decreased NK cell cytotoxicity, CD4 count, lymphocyte proliferative response.**
- **Evidence of interventions reversing the immunological deficits and salutary effect on viral load**

# Neuropsychiatric effects of ART

- **Zidovudine: good CNS penetration; confusion, agitation, insomnia, mania, depression.**
- **Efavirenz: dizziness, headache, confusion, stupor, impaired concentration, agitation, amnesia, depersonalization, hallucinations, insomnia, abnormal/vivid dreams. Most resolve within 6-10 weeks of starting treatment; may wax and wane; dose adjustments not helpful**
- **Ritonavir: increased levels of Risperidone; overlapping metabolic side-effect profile**

**Individualised risk-benefit assessment required**

**Table 1. ARV side-effects**

Class	Agent	Side-effects*
Nucleoside reverse transcriptase inhibitors (NRTIs)	Didanosine (ddI)	<ul style="list-style-type: none"><li>• Common: insomnia, mania</li></ul>
	Lamivudine (3TC)	<ul style="list-style-type: none"><li>• Rare: insomnia, mania, restlessness, agitation, delirium, depression, irritability</li></ul>
	Stavudine (d4T)	<ul style="list-style-type: none"><li>• Headache, insomnia, mania, abnormal dreams, anxiety, depression, somnolence, emotional lability</li></ul>
	Tenofovir (TDF)	<ul style="list-style-type: none"><li>• Common: aesthenia, depression, insomnia, anorexia (possibly related to co-use of EFV)</li></ul>
Non-nucleoside reverse transcriptase inhibitors (NNRTIs)	Zidovudine (AZT)	<ul style="list-style-type: none"><li>• Common: insomnia, anorexia, dizziness</li><li>• Rare: confusion, mania, convulsions, anxiety, somnolence</li></ul>
	Efavirenz (EFV)	<ul style="list-style-type: none"><li>• Common: depression, dizziness, insomnia, somnolence, impaired concentration, vivid dreams, and anxiety</li><li>• Rare: agitation, paranoia, delusions, euphoria, confusion, amnesia, depersonalisation, hallucinations, suicidal ideation, convulsions, false-positive cannabinoid test</li></ul>
Protease inhibitors (PIs)	Lopinavir/ritonavir (LPV/r)	<ul style="list-style-type: none"><li>• Rare: parasthaesia, insomnia, reduced libido, anxiety, abnormal dreams</li></ul>
	Ritonavir (RTV)	<ul style="list-style-type: none"><li>• Common: aesthenia, circumoral and peripheral paresthaesia, altered taste</li></ul>
	Atazanavir (ATV/r)	<ul style="list-style-type: none"><li>• Common: dizziness, insomnia</li><li>• Rare: depression, confusion, amnesia, abnormal dreams, anxiety</li></ul>
Antibacterials	Co-trimoxazole	<ul style="list-style-type: none"><li>• Rare: insomnia, depression, anorexia, apathy</li></ul>
	Isoniazid (INH)	<ul style="list-style-type: none"><li>• Common: peripheral neuropathy</li><li>• Rare: agitation, depression, hallucinations, paranoia, impaired memory</li></ul>
Other	Metronidazole	<ul style="list-style-type: none"><li>• Rare: CNS toxicity, agitation, depression, delirium, seizures</li></ul>
	Amphotericin B	<ul style="list-style-type: none"><li>• Common: headache</li><li>• Rare: delirium, agitation, anorexia, lethargy, diplopia</li></ul>
	Steroids	<ul style="list-style-type: none"><li>• Euphoria, mania, depression, psychosis, confusion</li></ul>

CNS = central nervous system.

\*Common: <10%; rare <1%.

**Table 3****Neuropsychiatric Side Effects of Drugs**

<b>Drug</b>	<b>Side Effects</b>
<b>NRTIs</b> Zidovudine (ZDV, AZT) Didanosine (ddI) Zalcitabine (ddC) Stavudine (d4T)	Agitation, confusion, lethargy, headache, insomnia Peripheral neuropathy Peripheral neuropathy Peripheral neuropathy
<b>NNRTI</b> Efavirenz	Nightmares, hallucinations, confusion, impaired concentration, somnolence, insomnia, euphoria, dizziness
<b>PIs</b> Ritonavir Saquinavir Amprenavir	Paresthesias Headache Headache, paresthesias
<b>Other Agents</b> Acyclovir Gancyclovir Dapsone Corticosteroids Sulfadiazine Amphotericin B Vincristine	Hallucinations Confusion, mania Agitation, hallucinations Mood lability, mania, psychosis Encephalopathy, hallucinations Agitation, lethargy, disorientation, headache Lethargy, dysphoria, seizures

Source: Horwath E and Nash SS (2005)

# Consequences of neuropsychiatric problems in PLWHA

- **Adherence to ART lowered by depression, cognitive impairment, alcohol / substance abuse**
- **Non-receipt of ART associated with substance abuse**
- **Poor adherence ascribed to neurocognitive impairment/forgetting**
- **Depression associated with immune suppression; documented association between depression and HIV progression, HIV-related mortality**
- **Complicate help-seeking behaviour, diagnosis, quality of care provided, treatment outcome and adherence**
- **Substance abuse increases risk of contracting HIV**
- **Substance abuse increases medical and psychiatric complications, delays treatment seeking, reduces adherence**

**Longer survival for PLWHA has been achieved. Focus needs to shift to improving health-related quality of life.**

# From Quantity...to Quality....

## HIV Is a Psychiatric Epidemic

HIV Infection

Psychiatric Illness

◆ **↑ Risk for HIV**

- Substance abuse
- Major depression
- Impulsive behavior & personality factors
- Cognitive impairment

◆ **↑ Risk for psychiatric illness**

- ◆ ↑ Major depression
- ◆ ↑ Mania
- ◆ HIV dementia (AIDS dementia complex)
- ◆ ↑ Psychosocial stressors

**Effective treatment of psychiatric illness may improve patient outcomes**

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# THANK YOU!



I alone cannot change the  
world, but I can cast a stone  
across the waters to create  
many ripples.

~ Mother Teresa