

Sleep Matters: Integrating Sleep Health into Obesity Public Health

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Meet our team

Meet our world class team at the Sleep Clinic comprised of sleep specialists from Restonic and Ezintsha



Dr Nomathemba Chandiwana

Dr Nomathemba Chandiwana is the Director and Principal Scientist at Ezintsha Research Centre. She is a medical doctor with extensive



Dr Alison Bentley

Dr Bentley has been seeing patients with sleep problems, both adults and children, off and on over the last 30 years. She ran the first diagnostic sleep laboratory in South



Nomathemba Madise

Nomathemba Madise is a Medical Secretary at Restonic-Ezintsha Sleep clinic. She is a Medical Secretary with extensive experience in managing



Nhlonipho Lawrance Xaba

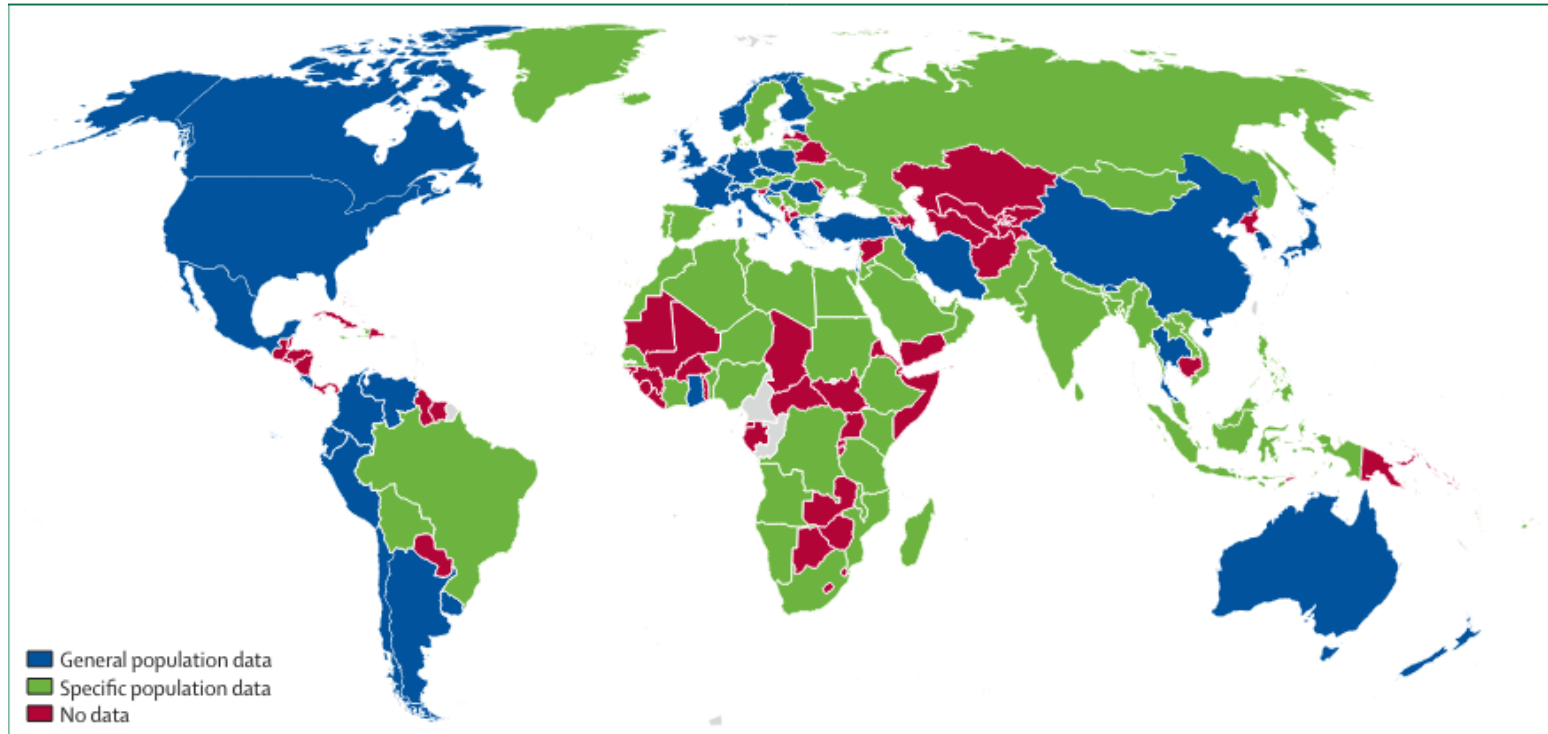
Lawrance Xaba is a driven individual with a solid background in Information Technology: Business Application specialist from Department of Informatics,



Sleep deprivation is a public health crisis

- Lifestyle Factors
- Stress and Anxiety
- Mental Health Disorders
- Medical Conditions
- Medications and Substances
- Environmental Factors
- Ageing

Global disparities in sleep data



Source, D Lim et al, 2023

- Only 22% of WHO member states have population-level sleep duration data
- Comparison with data availability for other health risk behaviors
 - alcohol consumption,
 - smoking,

Sleep disorders in low- and middle-income countries: a call for action

<https://doi.org/10.5664/jcsm.9614>

JCSM | Journal of
Clinical Sleep Medicine

LETTERS TO THE EDITOR

Sleep disorders in low- and middle-income countries: a call for action

Response to Zeng L, Chen R, Hu L, et al. Concern about sleep disorders in underresourced settings is imminent. *J Clin Sleep Med.* 2021;17(11):2339–2340. doi:[10.5664/jcsm.9590](https://doi.org/10.5664/jcsm.9590)

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Rural Public Health and Health Transitions Re

South Africa

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A nationwide study on sleep complaints and associated factors in older adults: ELSI-Brazil

Estudo nacional sobre queixas de sono e fatores associados em idosos: ELSI-Brasil

Estudio nacional sobre quejas de sueño y factores asociados en adultos mayores: ELSI-Brasil

Consequences of poor sleep

- **Reduced sleep quantity**
 - Insomnia
 - Natural short sleeper
- **Reduced sleep quality**
 - Obstructive Sleep apnoea
 - Periodic limb movement disorder
- **Parasomnias**
 - Non-REM related
 - REM related



Sleepiness



Irritability



Headaches



Low energy



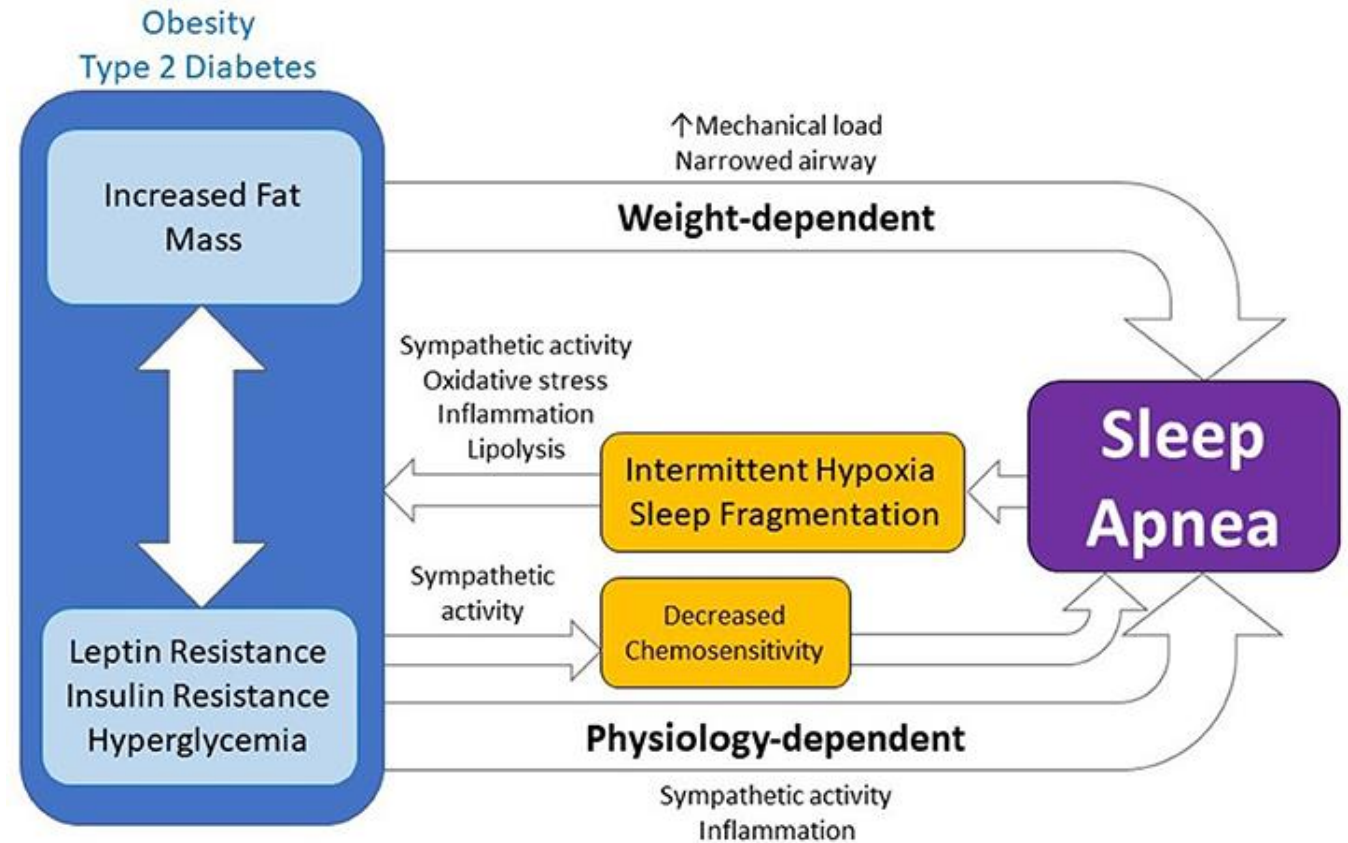
Poor motivation



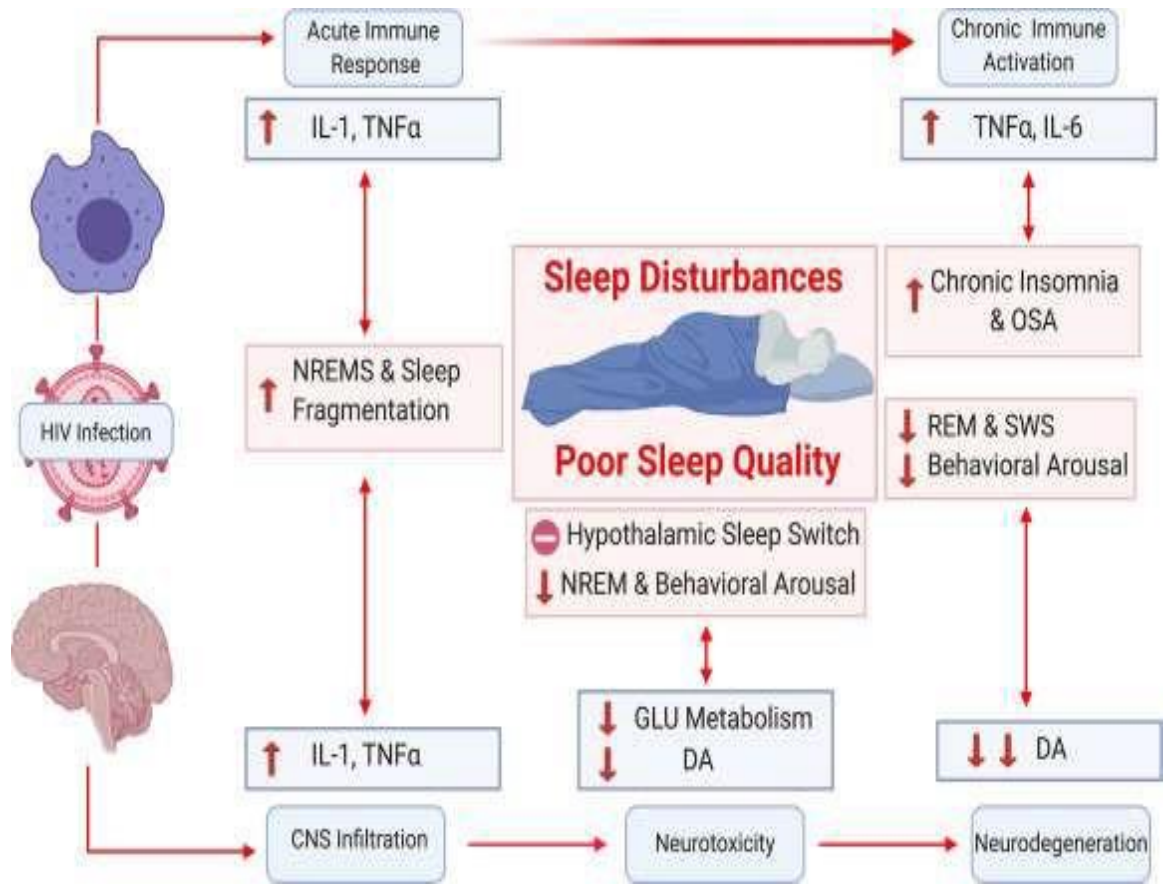
Decreased brain functioning

Obesity and OSA

- OSA contributes to obesity
- Daytime sleepiness may contribute to greater sedentary time, and therefore reduced caloric expenditure
- Calorie intake in those with OSA may be higher
- OSA is present in 41% of those with BMI >28, and 78% of those referred for bariatric surgery

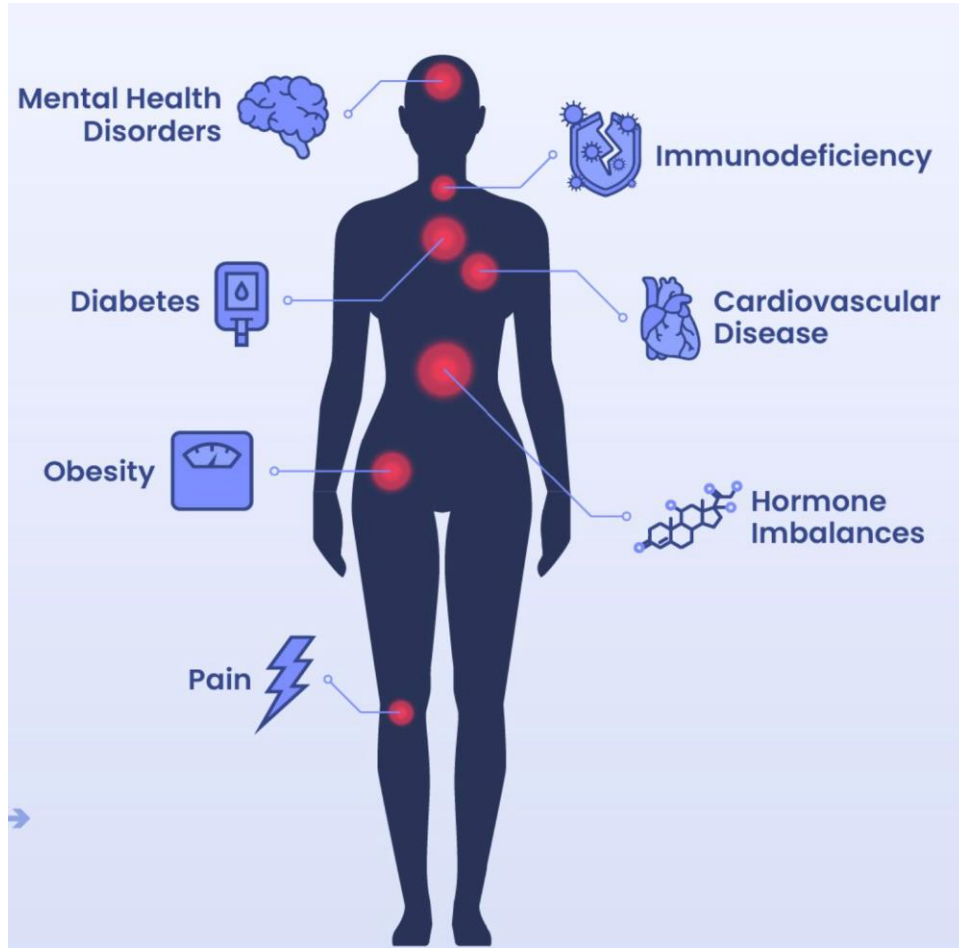


OSA, HIV and Obesity



- Poor sleep is common among PWH and linked to significant, poor quality of life, cardiometabolic morbidity and mortality.
- Independently contributes to conditions like hypertension, coronary heart disease, stroke, type 2 diabetes, dementia and impaired lipid metabolism.
- Among people with HIV (PWH), OSA, insomnia are common and exacerbate the already elevated risk of cardiovascular disease (CVD).
- Limited data exist on objective measures of sleep (OSA & insomnia, sleep quality) among PWH in South Africa, where HIV and obesity rates are high and cardiometabolic comorbidities are common.
- Developing appropriate interventions in less- resourced settings like South Africa is crucial, including making therapy more accessible

Cardiometabolic comorbidities associated with OSA



- Many people with HIV have disordered sleep
 - 70% of PLWH vs 30% in the general population.
- Insomnia
- Restless leg syndrome
- Drug side effects
- Circadian
- Mental
- OSA

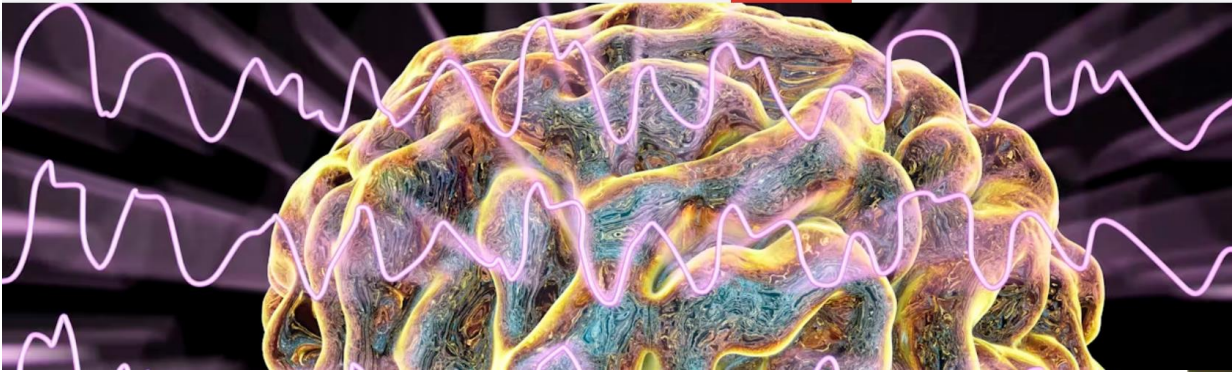
Sleep is a health equity issue

THE CONVERSATION

Academic rigour, journalistic flair

Q Search analysis, research, academics...

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We need to fight for sleep equity in SA, say leading researchers



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Sleep Health and Obesity Public Health Agendas

Viewpoint

1. Importance of integrating sleep health into obesity prevention and management programs
2. Education and awareness campaigns targeting sleep health
3. Standardizing and centralizing sleep data collection

The need to promote sleep health in public health agendas across the globe



Diane C Lim, Arezu Najafi*, Lamia Afifi, Claudio LA Bassetti, Daniel J Buysse, Fang Han, Birgit Högl, Yohannes Adama Melaku, Charles M Morin, Allan I Pack, Dalva Poyares, Virend K Somers, Peter R Eastwood†, Phyllis C Zee‡, Chandra L Jackson‡, on behalf of the World Sleep Society Global Sleep Health Taskforce*



Healthy sleep is essential for physical and mental health, and social wellbeing; however, across the globe, and particularly in developing countries, national public health agendas rarely consider sleep health. Sleep should be promoted as an essential pillar of health, equivalent to nutrition and physical activity. To improve sleep health across the globe, a focus on education and awareness, research, and targeted public health policies are needed. We recommend developing sleep health educational programmes and awareness campaigns; increasing, standardising, and centralising data on sleep quantity and quality in every country across the globe; and developing and implementing sleep health policies across sectors of society. Efforts are needed to ensure equity and inclusivity for all people, particularly those who are most socially and economically vulnerable, and historically excluded.

Introduction

WHO defines health as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity”. Like nutrition and physical activity, sleep is also an essential pillar of health.¹ Sleep is

Global disparities in sleep data: sleep duration as an example

Sleep health influences every facet of human function and is essential to optimise cardiometabolic, immune, brain, and mental health. To illustrate how disturbed

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Public Health Policies: advancing sleep health

Relevance Across Sectors:

Sleep impacts housing, urban planning, and the labor market.

Alignment with UN SDG

3: Essential for ensuring healthy lives and promoting well-being for all ages.

Recognition Needed:

Sleep must be prioritized by WHO for inclusion in national health agendas.

Role of Sleep Societies:

National and international organizations should advocate for sleep health.

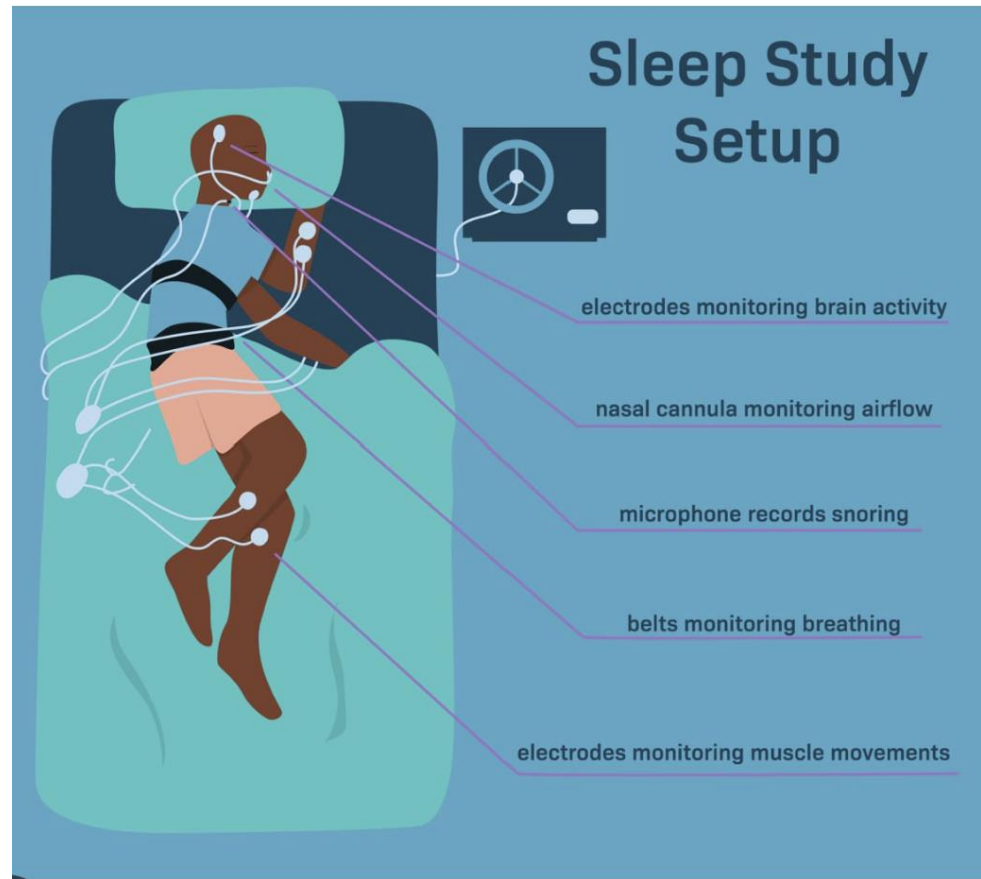
Global Strategies:

Develop strategies for comprehensive sleep data collection.

Health Equity: Must be central to all sleep-related public health initiatives globally.

Polysomnography/sleep studies

- PSG is the gold standard of evaluation for OSA.
- Home sleep apnoea test
- Disadvantages
 - Expensive
 - Specialised
 - Not available in the public sector



Treatment options for OSA

1. CPAP (gold standard)
2. BiPAP
3. Mandibular devices
4. Surgery



Case study: HIV, obesity and OSA

Obstructive sleep apnoea and cardiometabolic health in women living with HIV: 0035

A case for screening in low and middle-income countries

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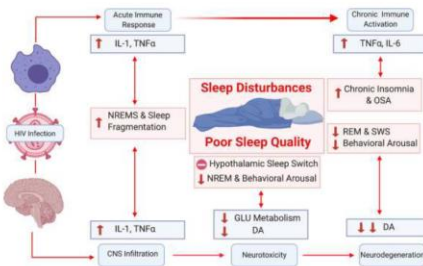
Obstructive sleep apnoea is underdiagnosed in PWH because of limited access to sleep laboratories for nocturnal polysomnography, which is labor-intensive and costly.

Simplified strategies with the use of validated questionnaires such as the Berlin questionnaire have been proposed to a scale-up screening of OSA in routine HIV care settings.

BACKGROUND

- Obstructive sleep apnea (OSA), the most common respiratory sleep disorder, is associated with an increased risk for cardiometabolic disease.
- HIV, has been found to be an additional risk factor of OSA, even in young and non-obese patients. (Figure 1)
- Despite the potential impact of OSA on quality of life and cardiometabolic health, there is limited data among PWH in southern Africa where both HIV and obesity are at epidemic levels and cardiometabolic comorbidities are common.
- Understanding the extent of the problem is a critical first step towards developing appropriate interventions for less-resourced high HIV burden settings.

Figure 1: Pathophysiology of OSA in PWH



METHODS

- This is a cross-sectional, observational study in a well-characterized cohort of patients enrolled in the ongoing ADVANCE trial in South Africa was conducted between September 2021 - January 2022.
- OSA risk was evaluated using the Berlin questionnaire (BQ) and consisted of 10 questions in three categories.
 - Category one, high risk was defined as persistent symptoms in >2 questions related to snoring;
 - Category two, high risk was defined as persistent daytime sleepiness, drowsy driving, or both
 - Category three, high-risk OSA was defined as a history of hypertension or a body mass index (BMI) >30 kg/m².
- Overall high-risk for OSA was defined as high-risk in at least two out of the three categories.
- Demographic and known cardiometabolic risk (CMR) markers were compared between participants at low-risk versus high-risk for OSA.
- A CMR risk score was calculated using BMI, waist circumference (WC), fasting glucose, high-density lipoprotein cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), triglycerides, and mean arterial blood pressure.

Table 1. Characteristics of participants with low-risk vs high-risk for obstructive sleep apnoea

	Low risk OSA n=46	High risk OSA n=9	P
Demographics			
Age, years	39.8 ± 6.7	37.2 ± 8.6	0.42
Female sex, n (%)	29 (63)	6 (66)	0.84
Cardiometabolic parameters			
HTN, n (%)	12 (26)	5 (56)	0.080
Body mass index, kg/m ²	26.2 ± 5.0	32.6 ± 7.1	0.002
Waist circumference, cm	86.3 ± 10.6	98.0 ± 14.6	0.007
Hip circumference, cm	105.7 ± 10.9	115.2 ± 16.7	0.033
SBP, mm Hg	127.8 ± 13.0	124.0 ± 10.1	0.41
DBP, mm Hg	84.1 ± 9.9	79.0 ± 11.6	0.17
HDL-C, mmol/L	1.53 ± 0.37	1.18 ± 0.14	0.008
LDL-C, mmol/L	2.67 ± 0.88	2.51 ± 0.55	0.6013
Triglycerides, mmol/L	1.0 ± 0.52	1.0 ± 0.36	0.99
Fasting glucose, mmol/L	4.93 ± 0.43	5.24 ± 0.68	0.77
CMR score	-0.04 ± 0.49	0.18 ± 0.54	0.23

Results are mean ± standard deviation unless otherwise stated.
 BMI = body mass index, CMR = cardiometabolic risk, DBP = diastolic blood pressure, HDL-C = high-density lipoprotein cholesterol, HTN = hypertension, LDL-C = low-density lipoprotein cholesterol, SBP = systolic blood pressure, SD = standard deviation, WC = waist circumference.

TAKE-AWAY

- In a relatively young cohort of mostly female PWH, obesity, hypertension, and an elevated risk for OSA were high.
- OSA is a modifiable risk factor for cardiometabolic disorders and is not currently not screened for in the public health care sector in South Africa.
- In a population already at high CMR because of traditional risk factors, coupled with a high prevalence of HIV infection, we show the need for screening of OSA to possibly prevent CMR among PWH

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EZ-NC-034

Characterising Obesity and Obstructive Sleep Apnoea in People with HIV in South Africa (OPHA)

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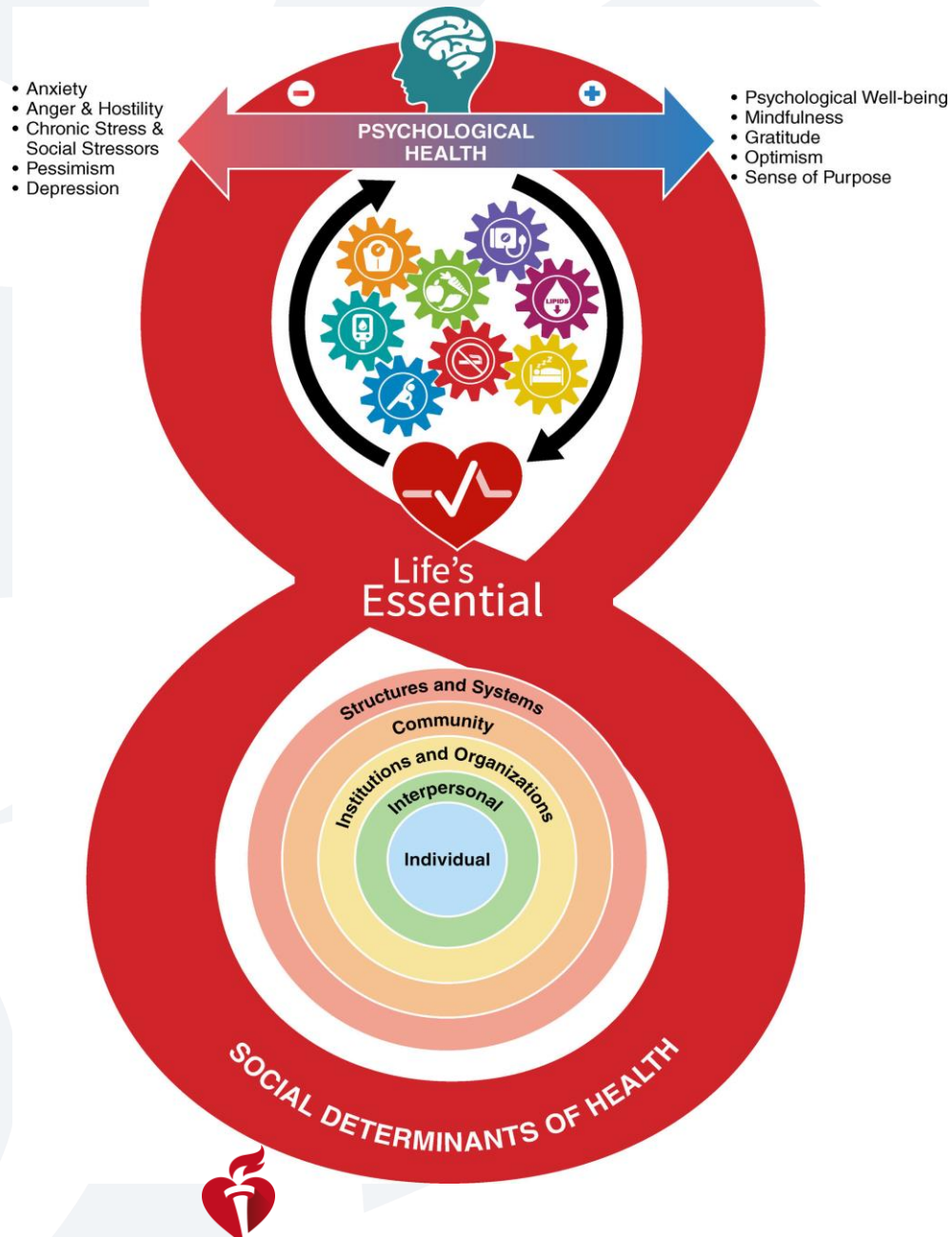
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Life's Essential 8:

1. Healthy Diet
2. Physical Activity
3. Nicotine Exposure
4. Sleep Health
5. Body Weight
6. Blood Lipids
7. Blood Glucose
8. Blood Pressure

World Sleep Academy



Program Overview
> World Sleep Academy > Program Overview

World Sleep Academy is organized into three tiers: Tier 1, Tier 2, and Tier 3. The tiers progress from introductory content in sleep science and medicine to advanced practice. The entire program takes one year to complete. The learning outcomes of completing the World Sleep Academy curriculum are the following:

- Learn the underlying causes of sleep disorders
- Develop your basic sleep medicine diagnostic capabilities
- Network with other sleep experts around the world
- Understand treatment options for sleep disorders
- Learn the basics of a sleep medicine practice

Program Overview
Watch a 10-minute introduction from the Academy director, Lourdes DelRosso, MD, PhD. Learn about the program's goals, faculty, and curriculum – and meet Dr. DelRosso!

What Will Each Unit Look Like?

- An enrichment lecture from a sleep specialist
- A case study with a discussion forum

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World Sleep Academy

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- Learn the underlying causes of sleep disorders
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Take-aways

- **Sleep as a Pillar of Health:** Equally important as nutrition and physical activity.
- **Integrate Sleep into Public Health:** Essential for obesity prevention and management.
- **Address Global Disparities:** Increase data collection and standardization of sleep metrics.
- **Bidirectional Links:** Recognize the interconnectedness of sleep, obesity, type 2 diabetes, and OSA.
- **Policy Development:** Advocate for sleep health policies at local, national, and international levels.
- **Promote Health Equity:** Ensure inclusive sleep health initiatives for all communities.

Thank you to my [awesome] mentors/collaborators:
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