

NTDs and Mental Health -estimating the global burden of mental health co- morbidity

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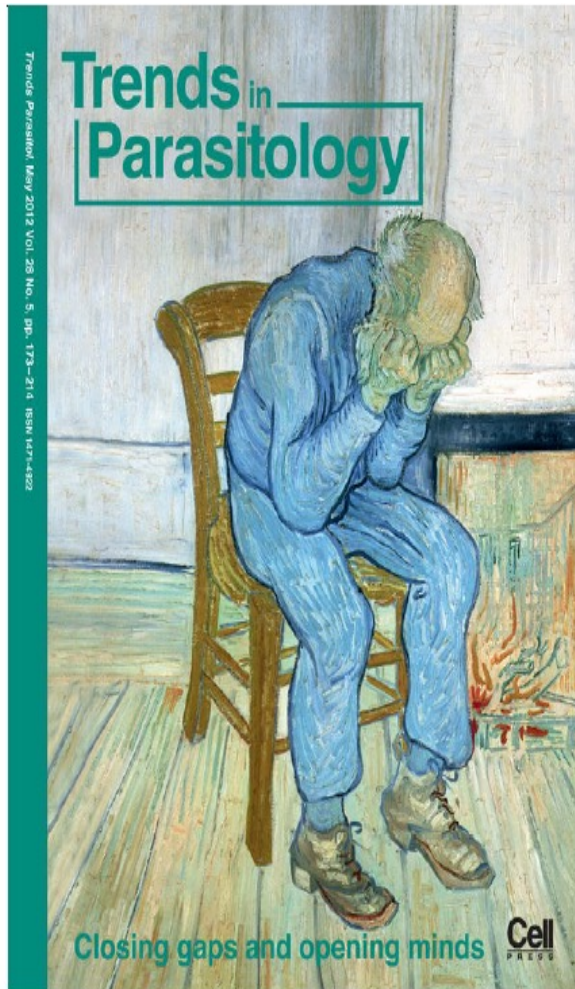
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Neglected tropical diseases and mental health: a perspective on comorbidity

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Reduced Educational performance



Educational Disruption
Children become carers
Reduced/no ability to access/afford education



Complete dependence on community
Reduced longevity

**Disablement
Stigma
Deformity
Blindness**



Medical poverty trap
Permanent poverty as no earned income



Reduced social/ Marital prospects

Reduced agricultural productivity
Inability to harvest
Loss of cash
crops fall back into staples
Reduced nutritional status



Burden on carers and loss of carer income



Direct cost of medical care
Appropriate/Inappropriate





MENTAL HEALTH AND DEVELOPMENT:

Targeting people with mental health
conditions as a vulnerable group



World Health
Organization



Mental Health and
Poverty Project

- Stigma and discrimination
- Physical and sexual abuse
- Restrictions on political and civil rights
- Unable to participate fully in society
- Unable to access essential health and social care
- Barriers to education and employment
- Experience disability and premature death

Table 11: Leading global causes of YLD, high-income and low- and middle-income countries, 2004

Low- and middle-income countries				High-income countries			
Cause	YLD (millions)	Per cent of total YLD		Cause	YLD (millions)	Per cent of total YLD	
1	Unipolar depressive disorders	55.3	10.4	1	Unipolar depressive disorders	10.0	14.6
2	Refractive errors	25.0	4.7	2	Hearing loss, adult onset	4.2	6.2
3	Hearing loss, adult onset	23.2	4.4	3	Alcohol use disorders	3.9	5.7
4	Alcohol use disorders	18.4	3.5	4	Alzheimer and other dementias	3.7	5.4
5	Cataracts	17.4	3.3	5	Osteoarthritis	2.8	4.1
6	Schizophrenia	14.8	2.8	6	Refractive errors	2.7	4.0
7	Birth asphyxia and birth trauma	12.9	2.4	7	COPD	2.4	3.5
8	Bipolar disorder	12.9	2.4	8	Diabetes mellitus	2.3	3.4
9	Osteoarthritis	12.8	2.4	9	Asthma	1.8	2.6
10	Iron-deficiency anaemia	12.6	2.4	10	Drug use disorders	1.7	2.4

COPD, chronic obstructive pulmonary disease.

“Mental and addictive disorders affected more than **1 billion** people globally in 2016. They caused **7%** of all global burden of disease as measured in DALYs and **19%** of all years lived with disability. Depression was associated with most DALYs .. Mental and addictive disorders affect a significant portion of the global population with high burden, in particular in **high- and upper-middle-income countries**. The relative share of these disorders has increased in the past decades, in part due to stigma and lack of treatment. “

Rehm and Shield Current Psychiatry Reports 2019

- Were NTDs considered in these studies ?
- Highest estimates of DALYs were not in LMICs
- “Depressive disorders were the leading cause of burden in previous GBD studies” *Ferrari et al PLOS Medicine 2013*
- **However, despite these authors considering their figures were underestimates NTDs were not mentioned**

Some NTDs with major Mental Health and neuropsychiatric sequelae

- Lymphatic Filariasis
- Podoconiosis
- Buruli Ulcer
- Human African Trypanosomiasis
- The Leishmaniases-CL, MCL, PKDL
- Onchocerciasis
- Trachoma
- Leprosy
- Neurocysticercosis
- Scabies
- Snake bite

GBD Disability Weights for Depression

Mild -0.159

Moderate-0.406

Severe-0.655

Examples of DWs for some NTDs

LF- 0.109

CL-0.069

HAT-0.542

Oncho-0.1

See de Vlas et al 2016

RESEARCH ARTICLE

Open Access

The burden of mental health in lymphatic filariasis



Thanh G.N. Ton¹, Charles Mackenzie² and David H. Molyneux^{3*}

Suma et al (2003) Kerala, India; **97%** patients suffered from depression or feeling of inferiority

Richard et al (2007) Togo **70%** in patient sample on Duke Anxiety-Depression Scale as high at risk of depression

Koji Kanda PhD Haiti **37.3 %** at risk of depression (Center for Epidemiologic Studies Depression Scale; CES-D)

Wijesinghe & Wickremasinghe (2010) Sri Lanka **8.5 %** directly reported depression

Obindo et al (2017) Nigeria; **42%**- mild; **31%**- moderate; **26 %**- severe- median duration of illness **17 years !**

We calculated that the burden of depressive illness in filariasis patients was 5.09 million DALYs and 229,537 DALYs attributable to their caregivers. These figures were around twice that of 2.78 million DALYs attributed to filariasis by the Global Burden of Disease study of 2010.

Braich et al 2012

Burden and Depression in the Caregivers of Blind Patients in India Ophthalmology, 119, 221-226

- 522 patients in Rampur, India; three categories of visual impairment studied
- Prevalence of depression in caregivers increased with degree of visual impairment of patient
- Related variables for depression were **daily hours required for patient supervision**, intensity of care giving **low household income** and caregiver being a **parent of blind child**
- Prevalence of caregiver depression increased to **48%** in cohort where there was no light perception (NLP) compared with **15 %** depression in urban study in Chennai

The missing burden

“In particular, the choice not to include so-called subtle morbidities, such as impaired cognitive development due to STH and schistosomiasis, or poor mental health from stigma and discrimination due to the disfigurements caused by LF and leprosy, is considered an important omission...” de Vlas et al 2016 PLOS NTDs

The burden of mental health associated with NTDs does not appear to be included by the mental health community in calculations of depressive disorders and anxiety

Human African Trypanosomiasis

“The justification for many of the parameters pertaining to HAT and used in the Global Burden assessments (e.g., disability weighting, estimates of incidence) are not transparent and have not been published.” Fevre et al 2008, PLOS NTDs

GBD 2018 DW 0.542

“cannot move around without help, and cannot lift or hold objects, get dressed or sit upright. The person also has very low intelligence, speaks few words, and needs constant supervision and help with all daily activities”

- Incidence is falling but how many years are being lived with disability (YLDs) in treated patients ?
 - What proportion of treated patients have permanent neurological sequelae ?
 - Are treated patients excluded from DALY calculations as in CL ?
 - What is caregiver MH burden and impact on households, children of patients ?
 - Recent studies in DRC on congenital HAT show children have permanent and irreversible neurological sequelae despite successful treatment for infection



The Caregiver scenario

**“My family has to take care of me when
the fevers come”**



Buruli Ulcer



Amoako et al in press PLOS NTDs

- In addition to the possible disability and deformity, BUD results in a **significant mental health and quality of life burden** on both **patients** and **caregivers** alike
- Evidence-based measures aimed at preventing disability and functional limitation should be encouraged in order to improve the mental health and quality of life of affected individuals
- Our findings support the **recommendation for integration of psychosocial interventions in BUD management** for patients with active and past BU infection, as well as their caregivers

Snake bite burden-Data from WHO

Road map

- Annual mortality 80,000-140,00
- Circa 2.7 million snakes bites annually
- Circa 400,000 disabled annually
- Wijisinghe et al., 2015: of snakebite victims
25.87% had mild, 38.10% had moderate and
33.33% had severe depression

Ongoing studies with Professor Rob Harrison, Ms Ruth Shelton, Dr Sayeem Ahmed to define Global burden of MDD in snake bite

“I can walk twice the distance I used to. I can now go to market and collect water.”



Thanks

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