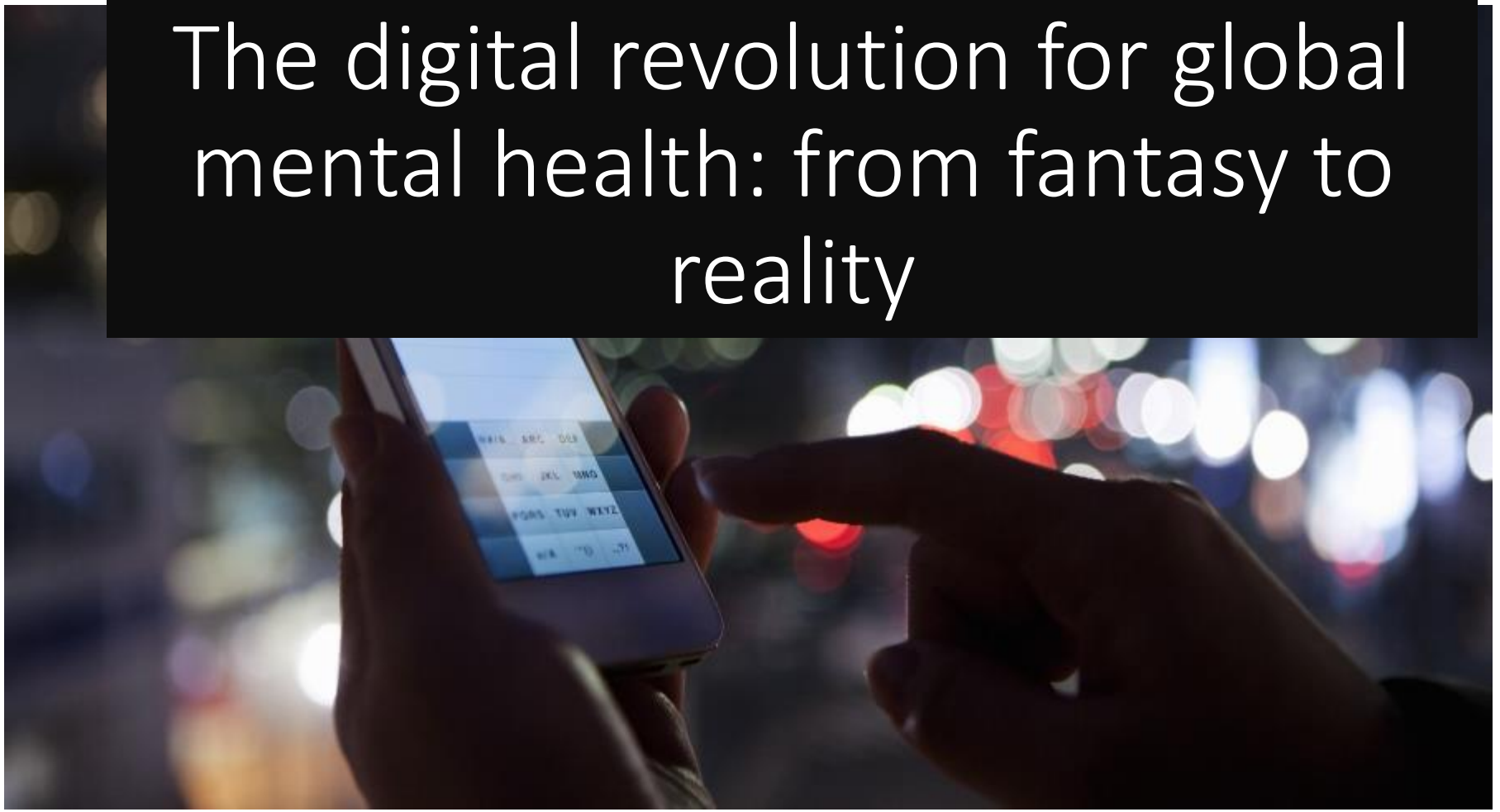
# The digital revolution for global mental health: from fantasy to reality



Vikram Patel

# 25 years ago

Not a health condition at all

Just the misery of life

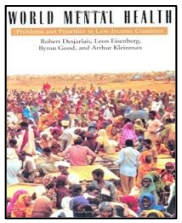
The medicalization of social suffering

The worried well

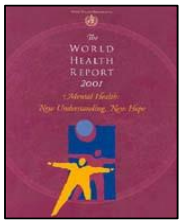
Not a killer

A ‘western’ construction

# The Milestones on the road to Mental Health and Sustainable Development

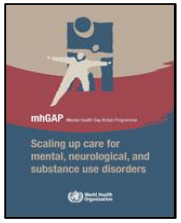



World Mental Health Report

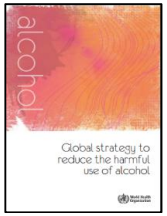



World Health Report: New Understanding New Hope

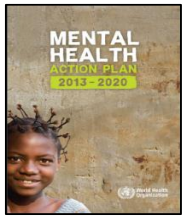

Lancet Series on MH 2007



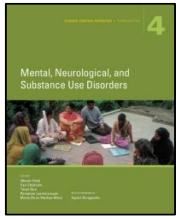

WHO mhGAP Program




Ratification of Global Strategy on Harmful use of Alcohol




WHO GMH Action Plan




Publication of DCP 3 on MNS disorders


Lancet Commission on MH & SD

1995 2001 2007 2009 2010 2013 2016 2018

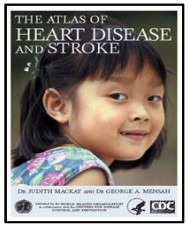
**MILESTONES ON THE ROAD TO MENTAL HEALTH (MH) AND SUSTAINABLE DEVELOPMENT (SD)**

1990 1996 2004 2008 2009 2011 2015 2016

Caracas Declaration on MH & Human Rights


Nations for MH Program

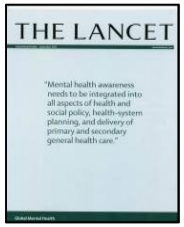

1st WHO Atlas



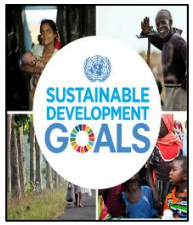

Ratification of UN CRPD

Establishment of Movement for GMH


2nd Lancet Series on MH



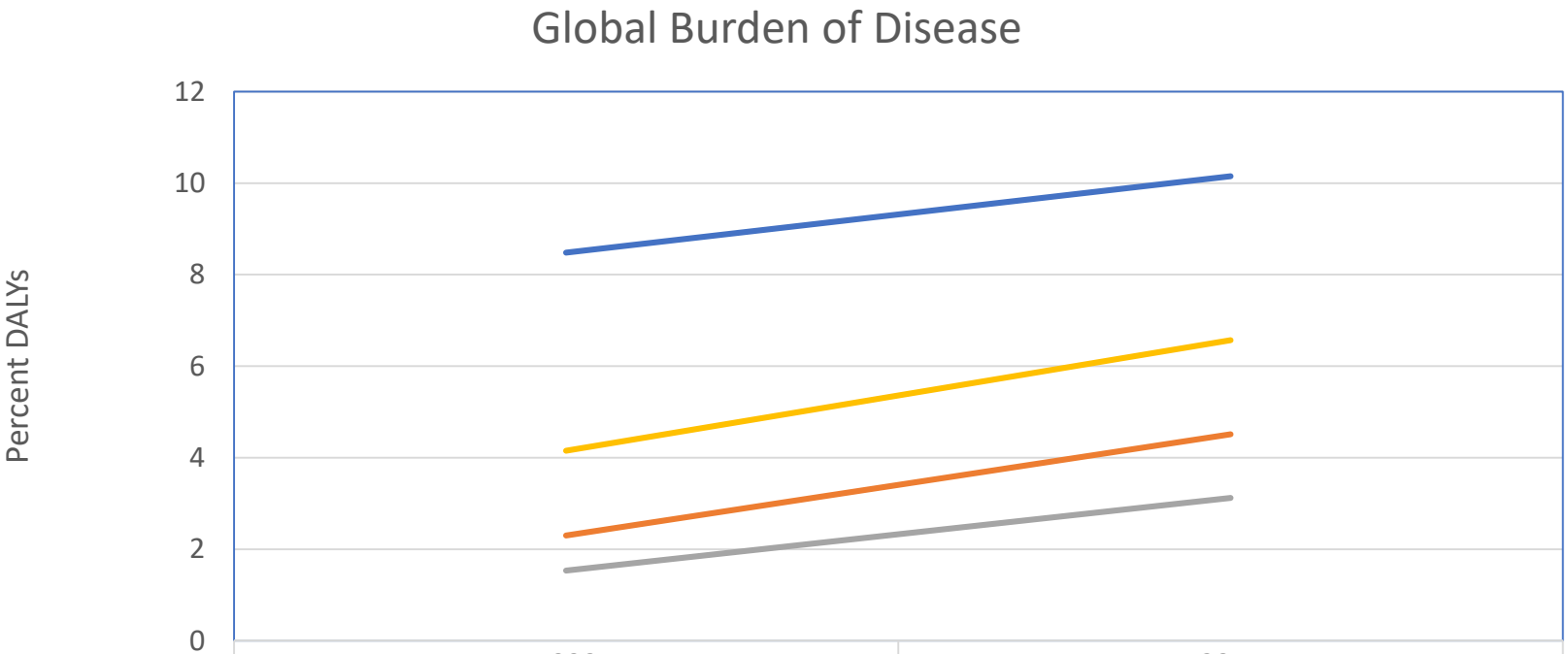

Ratification of UN SDGs




WHO/World Bank Global Meeting on Depression

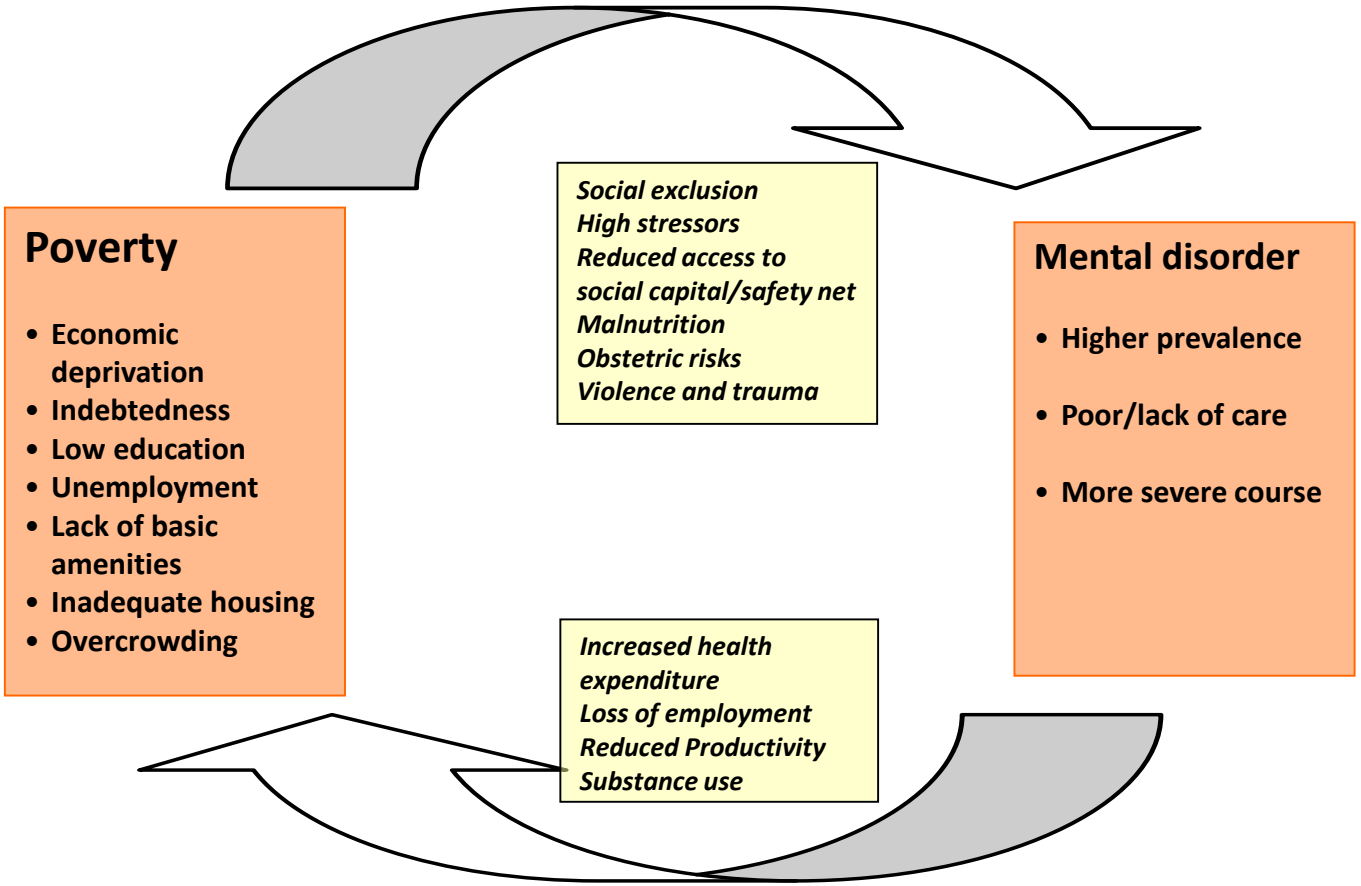
# The scientific foundations

# The doubling of the Global Burden of Disease due to mental and substance use disorders in the past 25 years (1990-2015)




| | 1990 | 2015 |
|---|---|---|
| High SDI | 8.48 | 10.15 |
| Low-mid SDI | 2.3 | 4.51 |
| Low SDI | 1.53 | 3.12 |
| Global | 4.15 | 6.57 |

# Vicious cycle of poverty and mental disorder



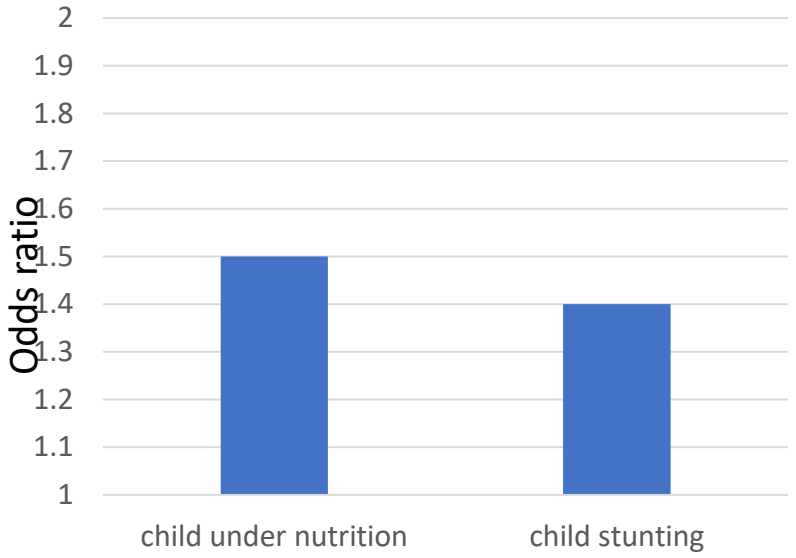
# Maternal depression and early childhood growth in developing countries: systematic review and meta-analysis

Pamela J Surkan,[a] Caitlin E Kennedy,[a] Kristen M Hurley[b] & Maureen M Black[b]

Bull WHO 2011

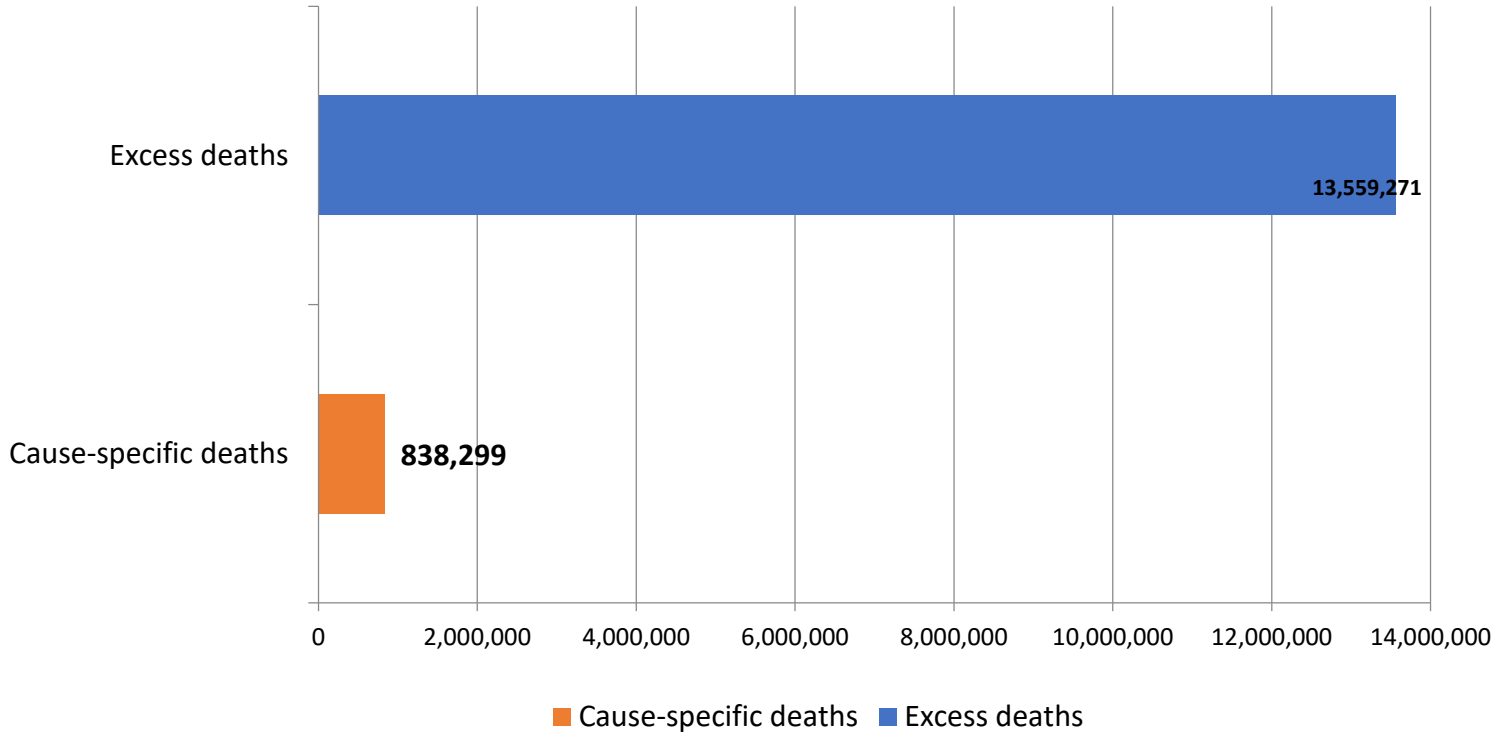
Woman and newborn, Dejen woreda, Ethiopia © Paolo Patruno Photography

17 studies involving 14000+ dyads from 11 countries



# Total Cause-specific and Excess Deaths for All MNS Disorders

(Whiteford et al, DCP3)



# A flourishing evidence base on community health worker interventions

Lay health workers and peer delivered psychological treatments for depression, trauma related and anxiety disorders

Parent delivered psychosocial interventions for autism

Family interventions for dementia

Community based rehabilitation for psychoses

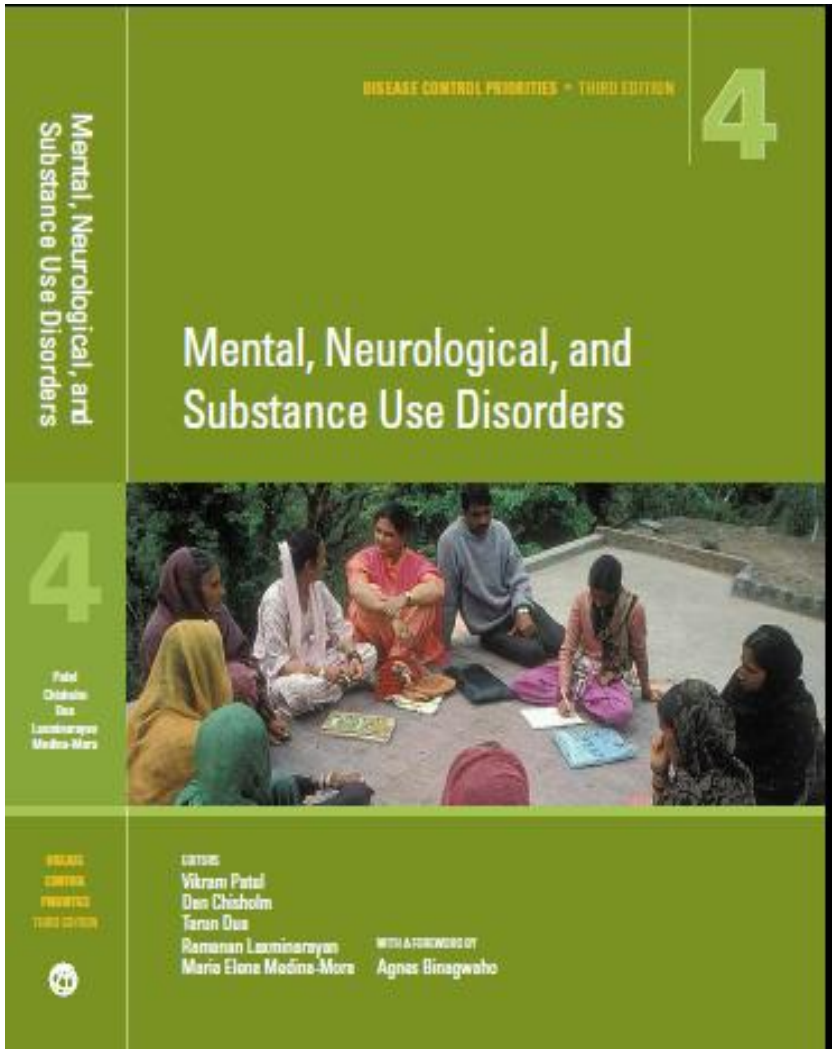
# Redefining mental health care

WHAT comprises a psychological intervention?

WHERE is it delivered?

WHO provides this intervention?

HOW is it delivered?


Mental, Neurological, and Substance Use Disorders
4
Patel
Chisholm
Dua
Laxminarayan
Medina-Mora
DISEASE CONTROL PRIORITIES • THIRD EDITION
4
Mental, Neurological, and Substance Use Disorders
EDITORS
Vikram Patel
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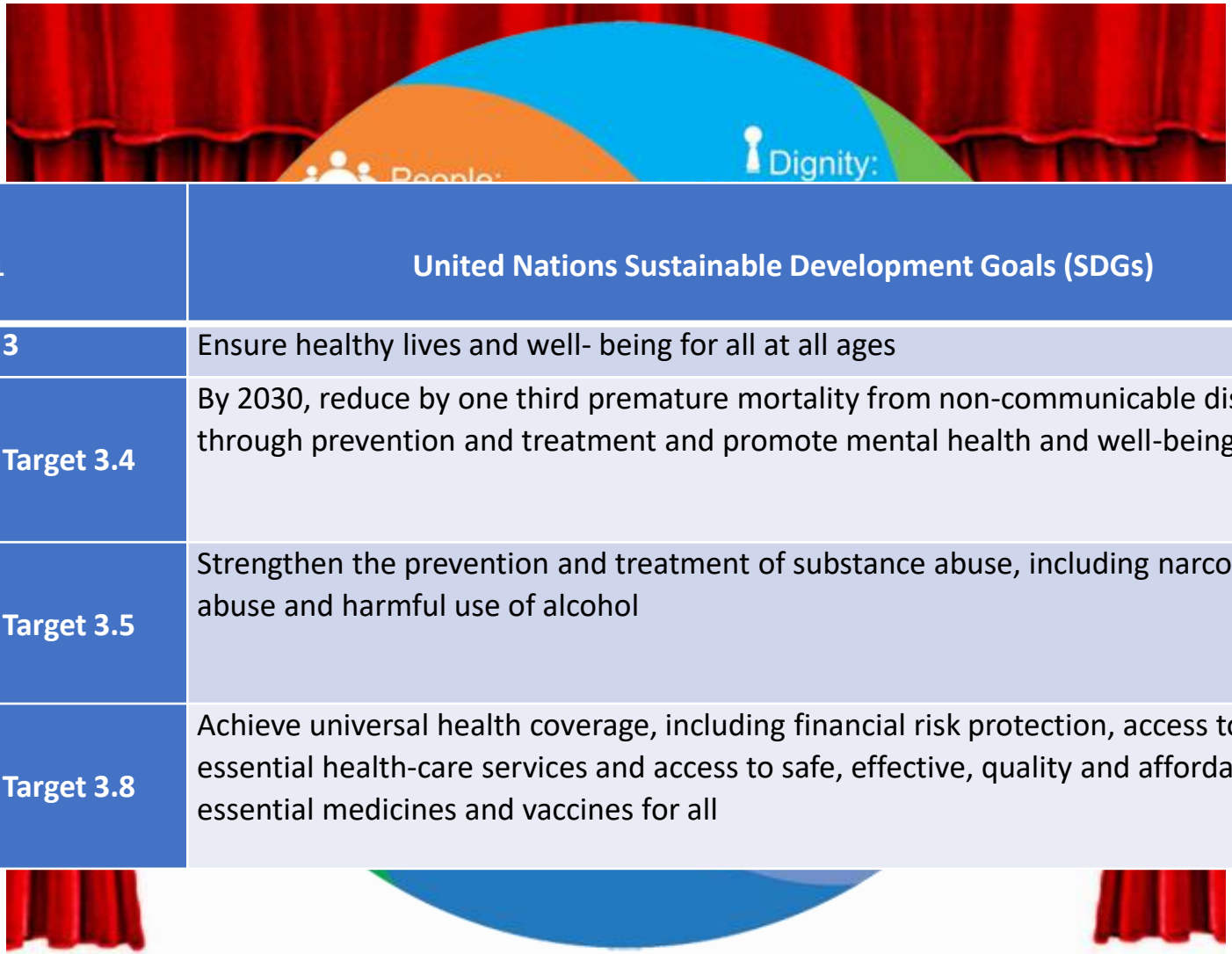
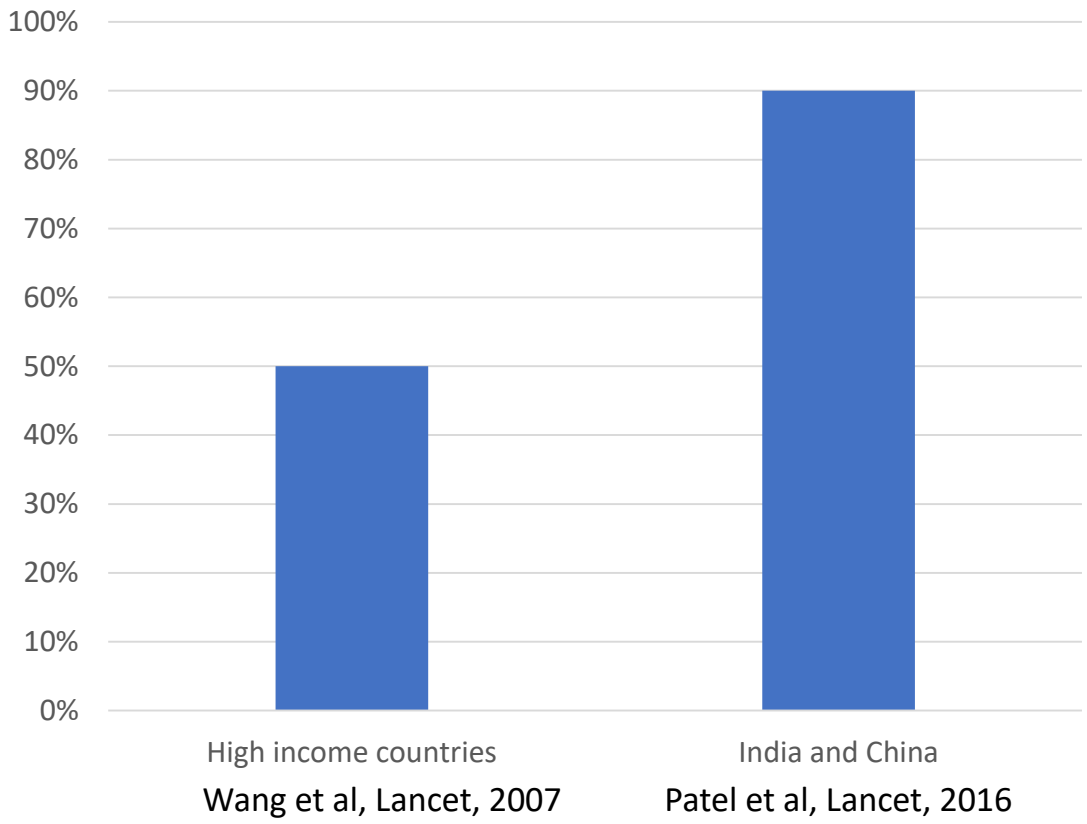
Tarun Dua
Ramanan Laxminarayan
Mario Elone Medina-Mora
WITH A FOREWORD BY
Agnes Binagwaho




| Box1 | United Nations Sustainable Development Goals (SDGs) |
|---|---|
| SDG 3 | Ensure healthy lives and well- being for all at all ages |
| SDG Target 3.4 | By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being |
| SDG Target 3.5 | Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol |
| SDG Target 3.8 | Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all |

# A reality check

# The treatment gap

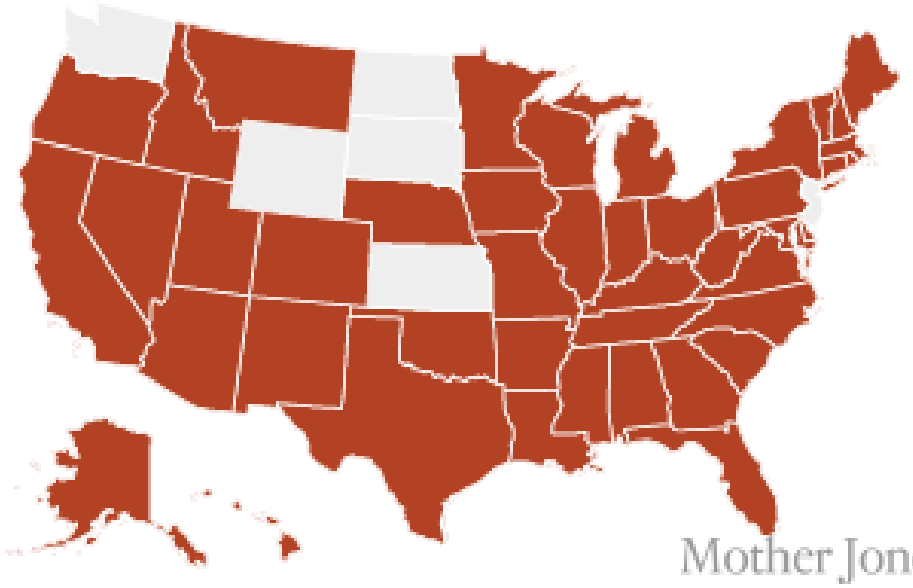



Wang et al, Lancet, 2007

Patel et al, Lancet, 2016

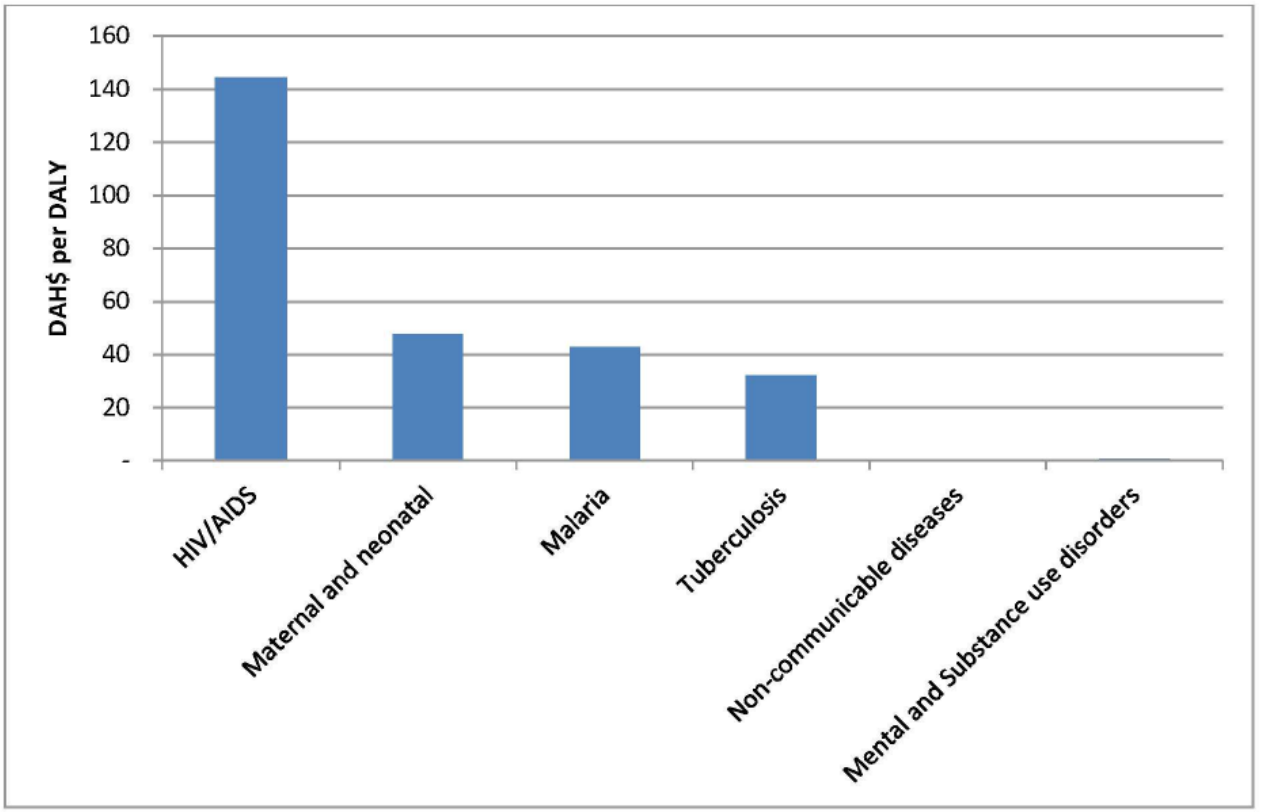
# Human rights violations in mental hospitals

In **44 states and D.C.**, there are more people locked up with serious mental illness than in any state psychiatric hospital.




Source: Treatment Advocacy Center

# Development assistance for mental health
(Charslon et al, PLoS One 2016)




#Includes 'maternal' and 'neonatal' GBD disorder categories. Note: DAH data is averaged across a 3-year period, 2012–2014

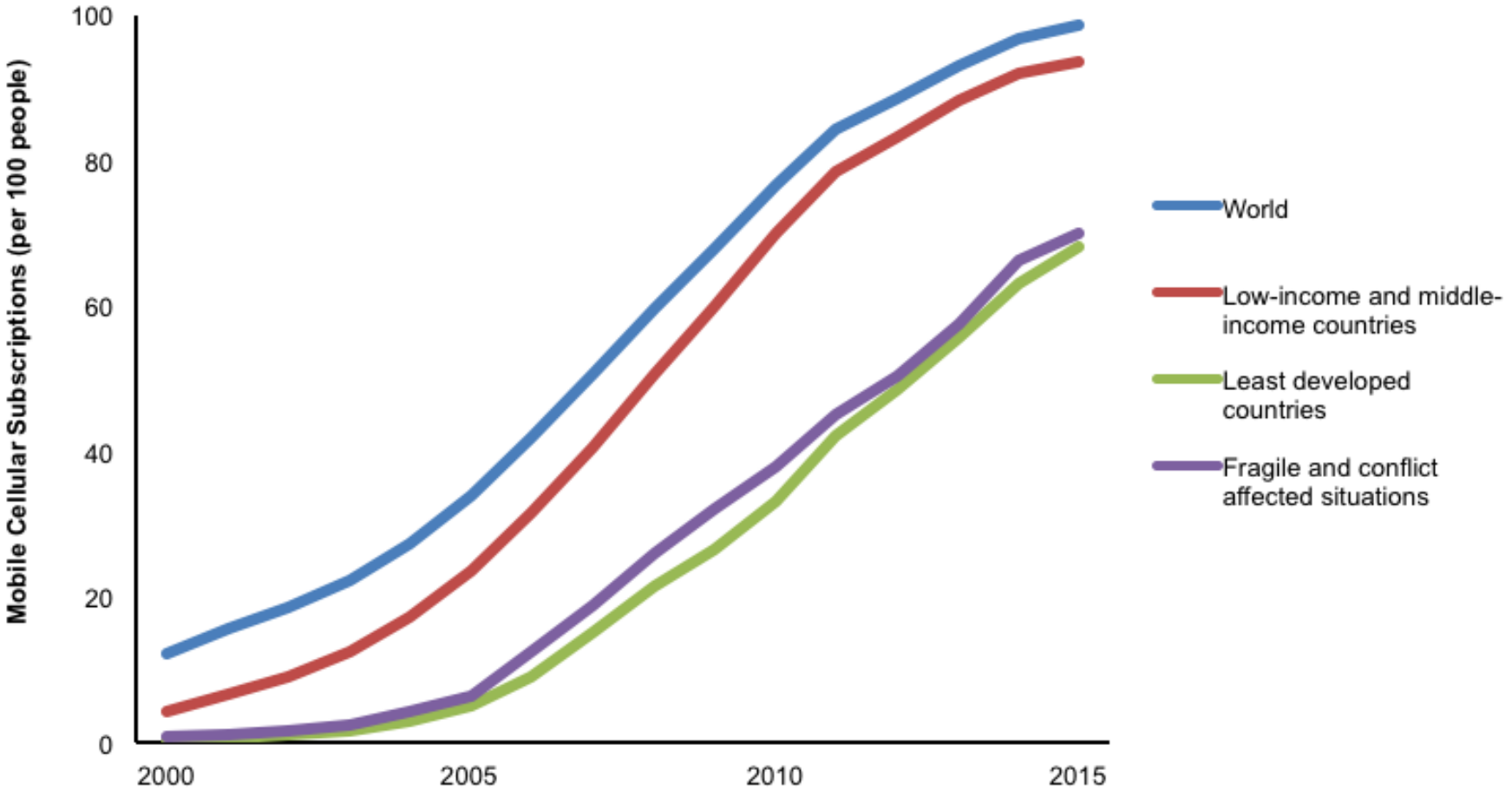
**Fig 5. DAH per DALY, LMICs, 2013.**

doi:10.1371/journal.pone.0169384.g005

# The moral imperative for mental health and sustainable development

Leave no one behind by implementing evidence based community delivered care for the range of mental disorders, embedded in a universal health care paradigm

# The unprecedented digital opportunity: mobile cellular subscriptions: 2000-2015




**Source:** World Bank, 2017.

# Some factoids

- Mobile phone subscriptions exceed 80% of population in many low-income countries
- Increasing access to the Internet
  - (but still only 27% in South Asia to 60% in South America)
- Nearly 40% of world's Internet traffic comes from mobile devices
  - Mobile devices account for 82% of web traffic in Nigeria, 75% in South Africa, 70% in Indonesia, & 66% in India

# Over 2 billion social media users worldwide


*…most rapid growth in use of social media occurring in low-income and middle-income countries*

**Source:** Pew Research Center, 2015.

# Digital technology for treating and preventing mental disorders in low-income and middle-income countries: a narrative review of the literature

*John A Naslund, Kelly A Aschbrenner, Ricardo Araya, Lisa A Marsch, Jürgen Unützer, Vikram Patel, Stephen J Bartels*

**Total of 49 studies**: most preliminary evaluations of feasibility and acceptability.

**Over 20 countries**: Latin America (39%), South Asia (16%), East Asia (14%), Africa (14%), Eastern Europe and Central Asia (10%) and Middle East (6%).

Most studies targeted **depression** (33%), **serious mental illness** (18%), or **substance misuse** (14%).

Studies used **range of digital technologies**: telepsychiatry applications, mobile phones, mobile SMS-based programs, smartphone applications, and web-based programs.

# Key focus areas

(1) Technology for supporting clinical care and educating health workers
(2) Mobile tools for facilitating diagnosis and detection of mental disorders
(3) Technologies for promoting treatment adherence and supporting recovery
(4) Online self-help programs for individuals with mental disorders
(5) Programs for substance use prevention and treatment

# Future Opportunities for Digital Technology to Have Impact

| | |
|---|---|
| Workforce Shortage | • Training and supervision of community providers<br>• Expand reach of specialty providers |
| Humanitarian Crises | • Conflict or disaster zones<br>• Role of technology during crises |
| Young People | • More likely to use technology<br>• Dramatic gaps in providing care to young people |
| Aging Populations | • Support mental health care in late life<br>• Support Alzheimer's and dementia care |
| Big Data | • Increasing use of social media globally<br>• Leverage online interactions to facilitate support |

# Limitations of the evidence

Few rigorous evaluations and those which do evaluate show mixed results (for example, self help is not effective without guidance); let us not get deluded by the idea that technology, in and of itself, is a panacea and demand evidence

Potential risks with digital technology (e.g., privacy) require greater attention

Concerns about equity and access need to be addressed or else digital technologies can widen health inequalities (e.g., poverty, marginalized individuals, women, rural areas)

Technology is already outdated by the time "evidence" is available!

# Opportunities and Challenges of Developing Information Technologies on Behavioral and Social Science Clinical Research



NIH National Institute of Mental Health

# Digital technologies for global mental health: key principles

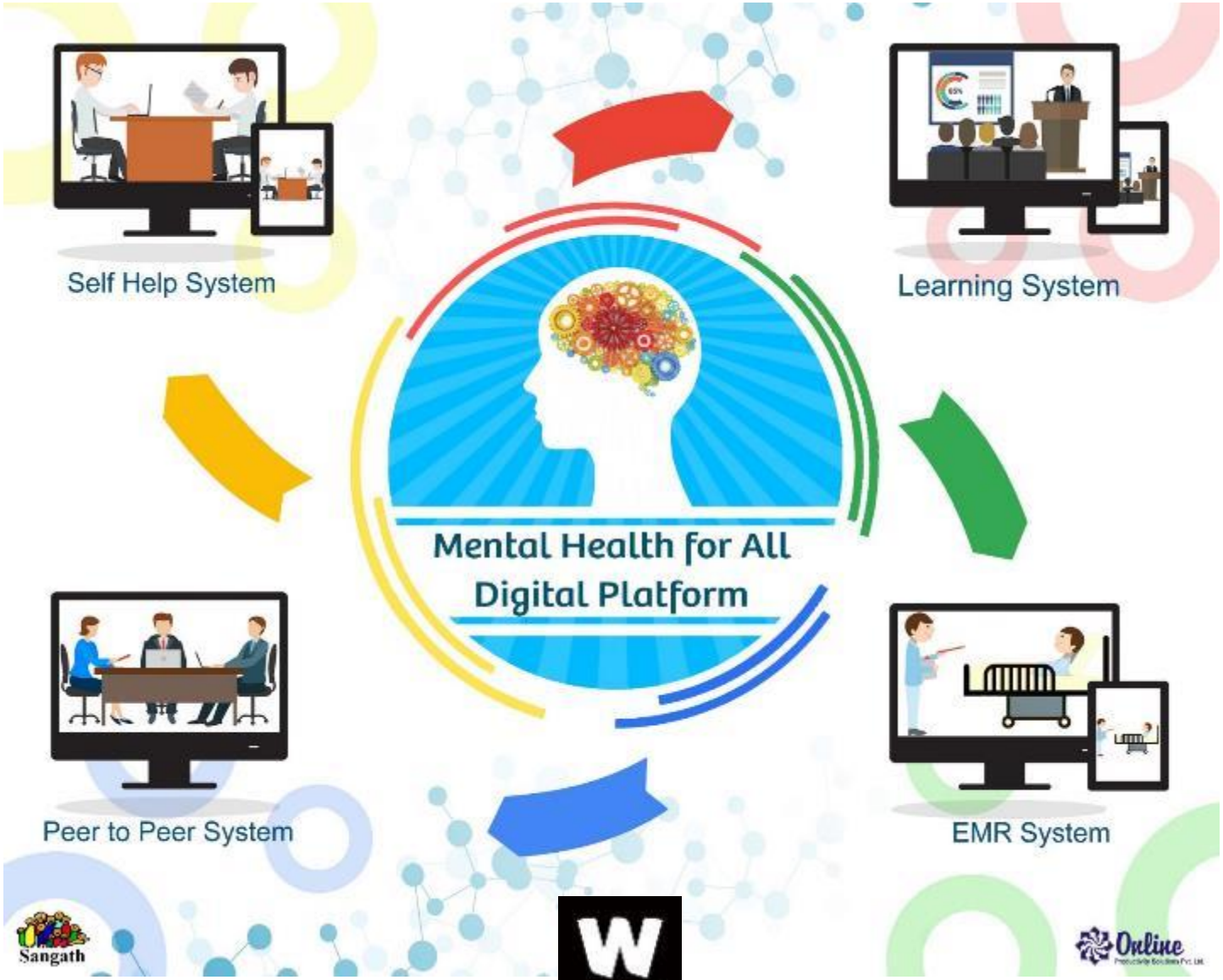
Low-cost and scalable

Practical for front-line workers in routine settings

Promote self-help and empowerment of the ultimate beneficiary

Backed by evidence

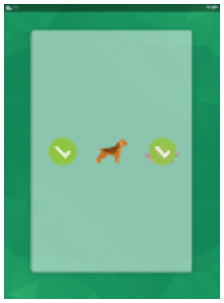
# The PRIDE psychological therapy digital platform



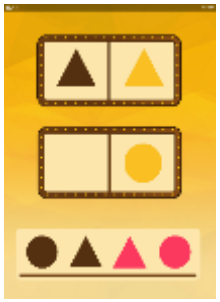
# Portable technologies for assessing cognitive development

https://www.emotiv.com/

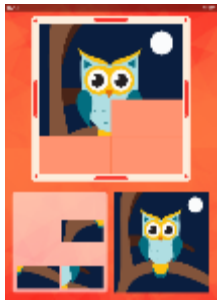
Visual Perception



Reasoning



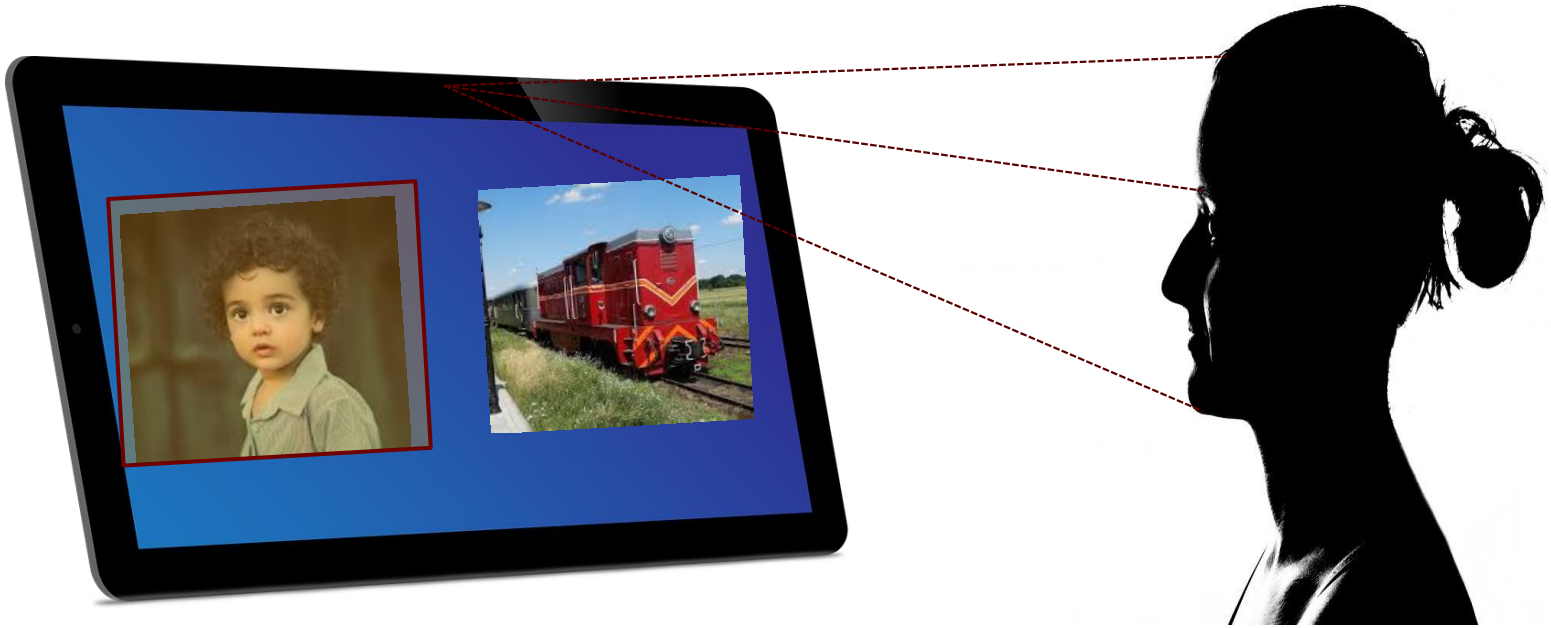
Memory



Attention


Sangath

# Developing a Screening Tool for Autism Risk using Technology (START)

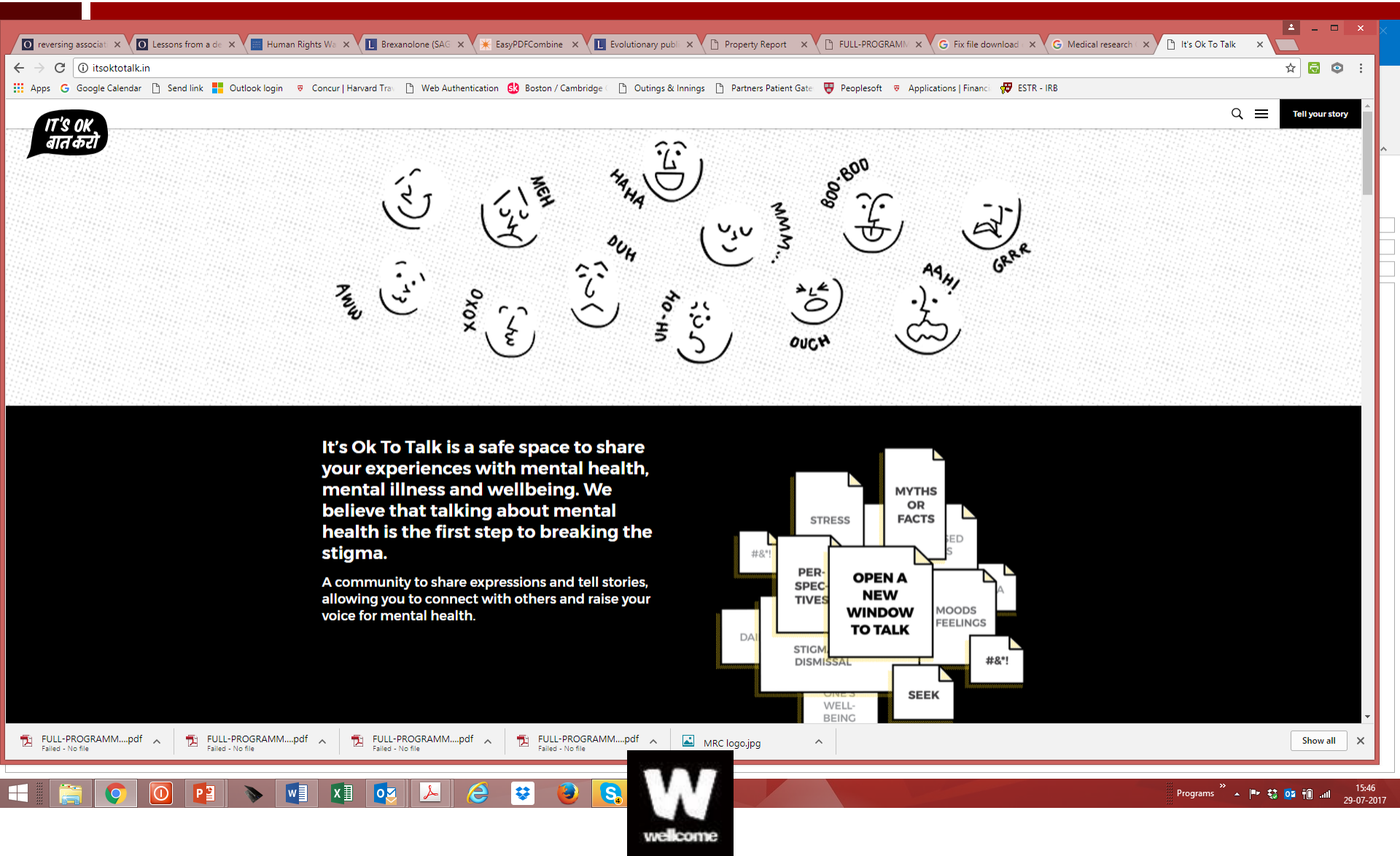


Longer looks on preferred stimuli

Head & Eye Detection

MRC Medical Research Council

# www.itsoktotalk.in



# …and beyond

- Mobile phone based active and passive monitoring of mental health
- Artificial Intelligence enabled chatbots
- Cloud-based machine learning for guiding treatments

# Acknowledgements

John Naslund