Let's stop HIV

Nuove prospettive e popolazioni speciali

HIV and Non Infectious co-Morbidities in Migrants

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MHMC

UNIMORE
UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Mary, 66 yrs   HIV duration 23 yrs

CD4=577/microL

CD4/CD8=1.1

HIV VL<40 c/mL (ND)

BMI=38
Waist=115 cm

1997 Pregnancy

MM:

2007 lipodistrophy

2012 HTN, T2DM

2013Osteopenia

2016 CKD

(eGFR=50 mil/min)

PRE-Frailty 1/5

FI=0.30

No sarcopenia

EQ-4D5L=0.85
Wide spread pain

1996 AZT
1999 D4T DDI EFV
2005 TDF+3TC+ATV/r
2009 TDF/FTC+DRV/r

VitD
Amlodipina
Bisprololo
Idroclortiazide
Metformine

E/C/F/TAF

WIDESPREAD PAIN AND ASSOCIATIONS WITH HIV-RELATED FACTORS IN PEOPLE WITH HIV (PWH)

C.A. Sabin[1], K. Nkhoma[2], R. Harding[2], A. Geressu[1], E. Bagkeris[1], P.W.G.Mallon[3], F.A.Post[4], M. Sachikonye[5], A. Milinkovic[6], J. Anderson[7], J. Vera[8], M. Johnson[9], I. Williams[1], and A. Winston[10] for the POPPY study group

[1]UCL, UK [2]Kings College London, UK [3]University College Dublin, Ireland [4]Kings College Hospital, London, UK [5]UK Community Advisory Board, London [6]Chelsea and Westminster Hospital, London, UK [7]Homerton University Hospital NHS Trust, London, UK [8]Brighton and Sussex Medical School, Brighton, UK [9]Royal Free NHS Trust, London, UK [10]Imperial College London, UK

POPPY
Pharmacokinetic and clinical observations in people over 50

Background

Widespread and burdensome pain is frequently reported by PWH, although associations with HIV factors, particularly in those on current antiretroviral (ART) regimens, have not been determined.

Aim

We investigated the prevalence of widespread pain and its associations with socio-demographic and HIV factors among PWH in the POPPY Study.

Assessment of pain

Self-reported pain information was collected from 2013-2015 via self-completed questionnaires and through a pain mannikin identifying affected body sites (Figure).
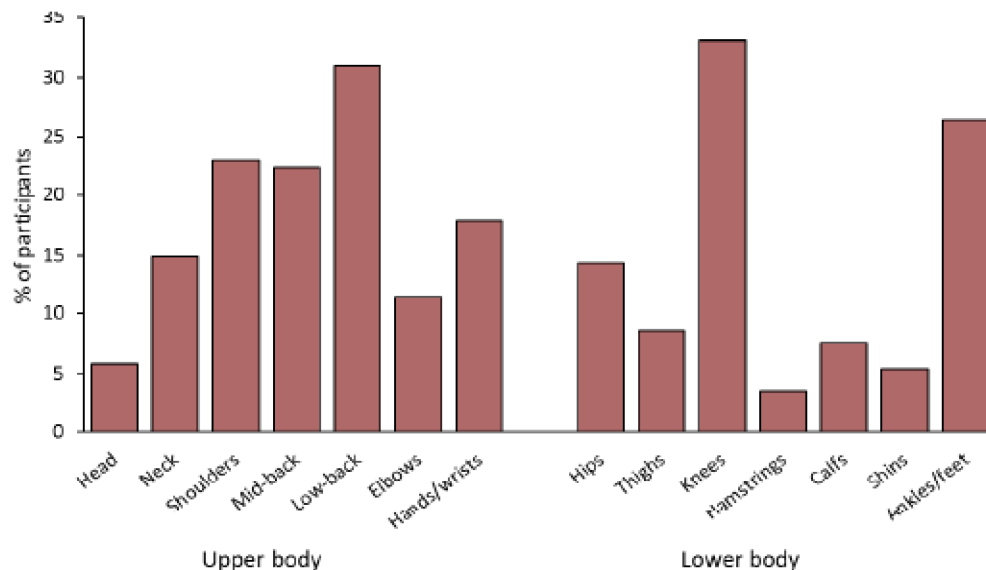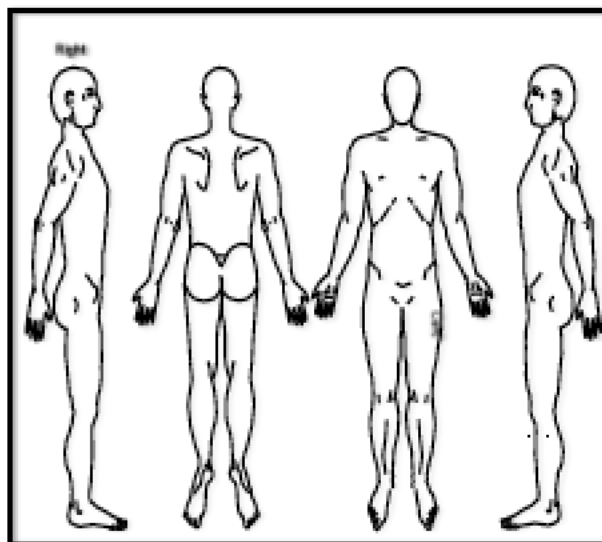
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Figure 3: Prevalence of widespread and non-widespread pain according to various measures of exposure to ART
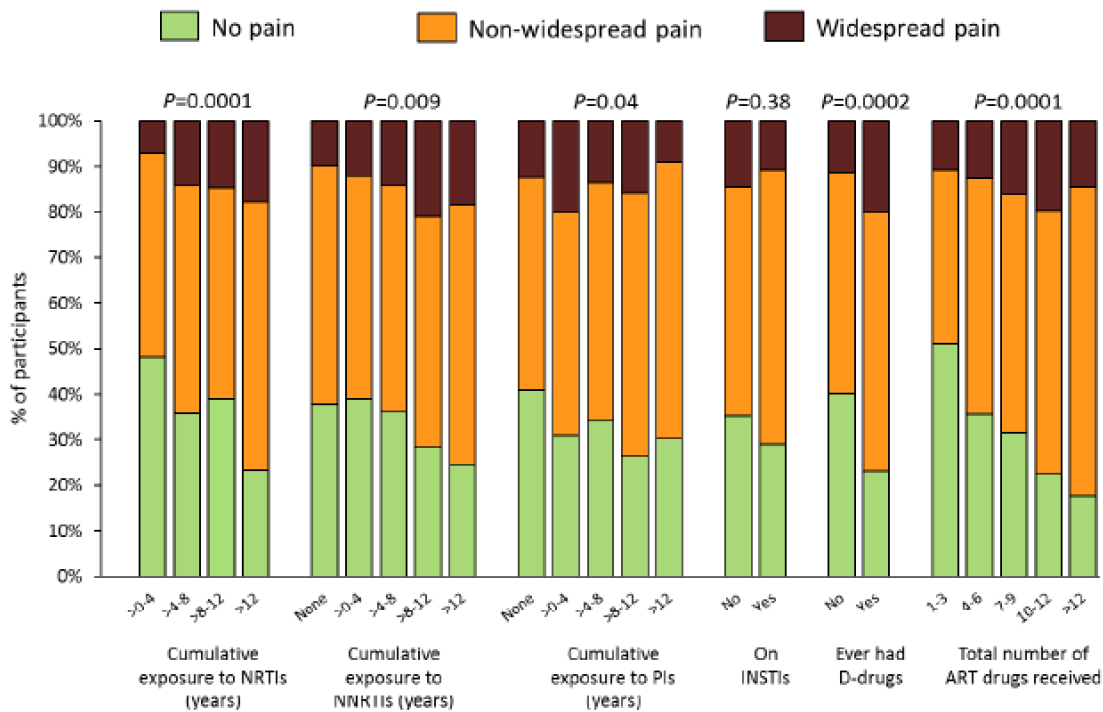
After adjustment for age and gender, **only ever taking a d-drug remained an independent predictor of widespread pain, more than doubling the odds (adjusted OR 2.09, 95% confidence interval 1.44 to 3.01, *P* = 0.0001).**

POPPY investigators speculated that the link between ever taking a d-drug and widespread pain could reflect the long-term impact of d-drug-induced neuropathy. But they could not rule out the possibility that d-drug exposure merely flags those participants who have lived longer with HIV and thus took antiretrovirals longer and spent a longer time with a low CD4 count. They plan further analyses of the full dataset to explore the impact of drug- and CD4-related factors with an eye toward improving pain management in people with HIV.
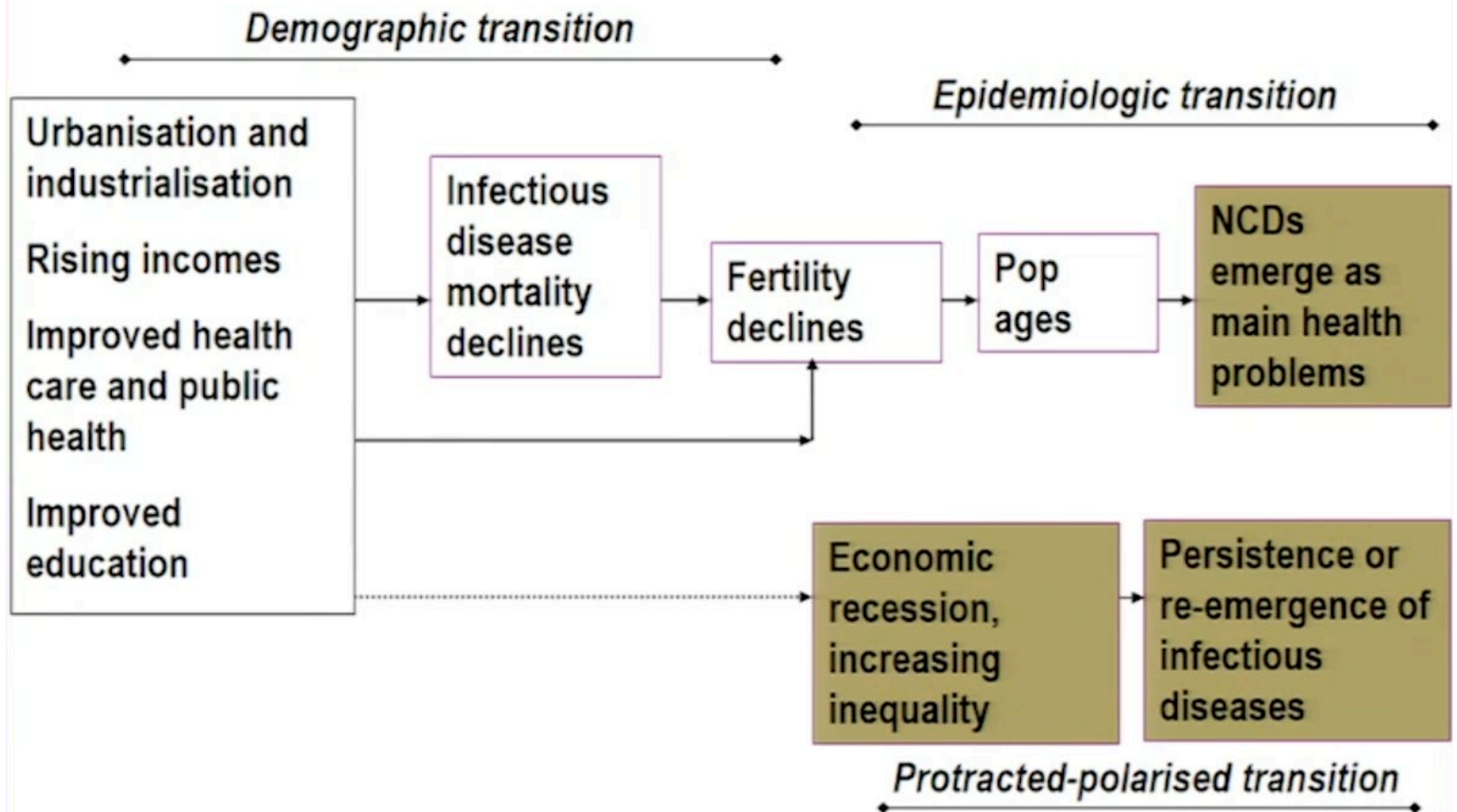
What was Mary's migration project?

Why did she leave Nigeria?

Why Mary and not others?

What was she looking for?

Where does Mary come from?

The Health Transition

Demographic transition

Epidemiologic transition

Urbanisation and industrialisation

Rising incomes

Improved health care and public health

Improved education

→ Infectious disease mortality declines → Fertility declines → Pop ages → NCDs emerge as main health problems

Economic recession, increasing inequality → Persistence or re-emergence of infectious diseases

Protracted-polarised transition

Summary of models of the epidemiological transition

The classical or western model:

a gradual progressive decline from high to low mortality and fertility taking place over several centuries. This accompanied the process of modernisation in most western European and North American societies.

The accelerated model:

A much faster decline in mortality and fertility than in the classical model, taking place over decades rather than centuries. Examples include Japan, Mauritius and the Seychelles.

The contemporary or delayed model:

The recent and yet to be completed transition in many low-income countries, often with a high burden from old and new (e.g. HIV) infectious diseases while NCDs gain increasing importance.
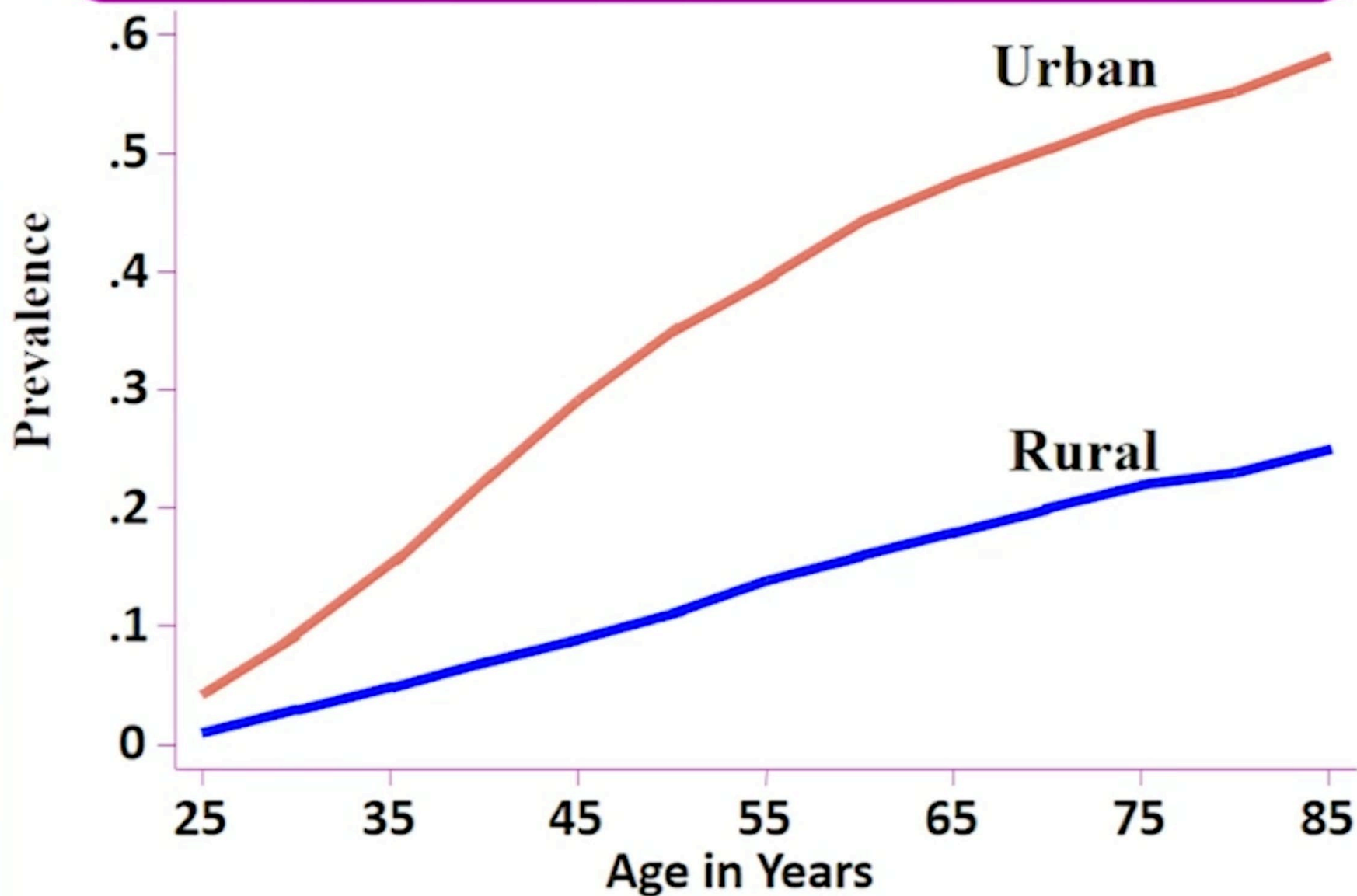
The polarised model:

Different sections of the population at different stages of the transition, strongly related to both economic inequity and different levels of urbanisation within those populations
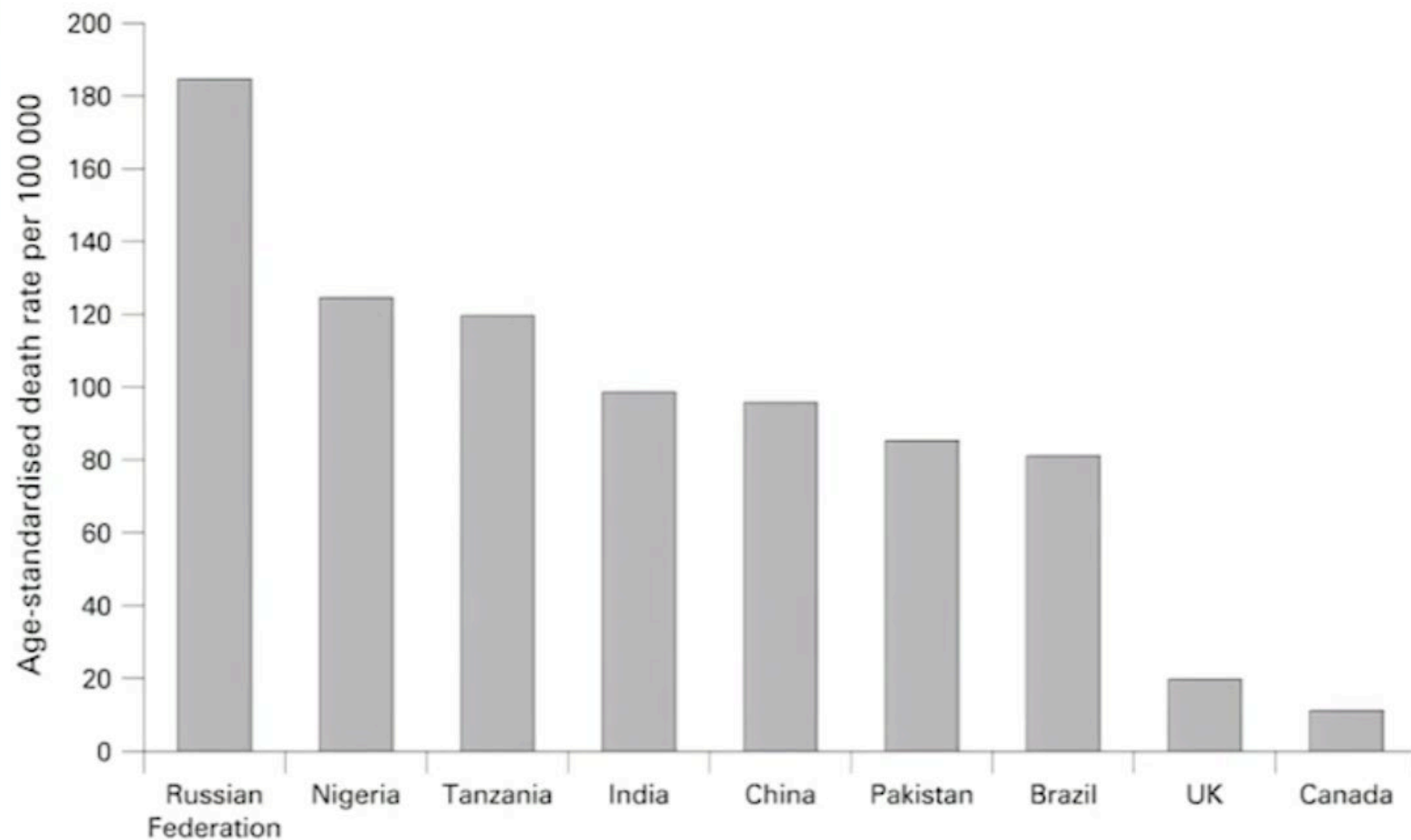
Obesity: Heterogeneity

SOBNGWI E, et al. Int J Obes 2002
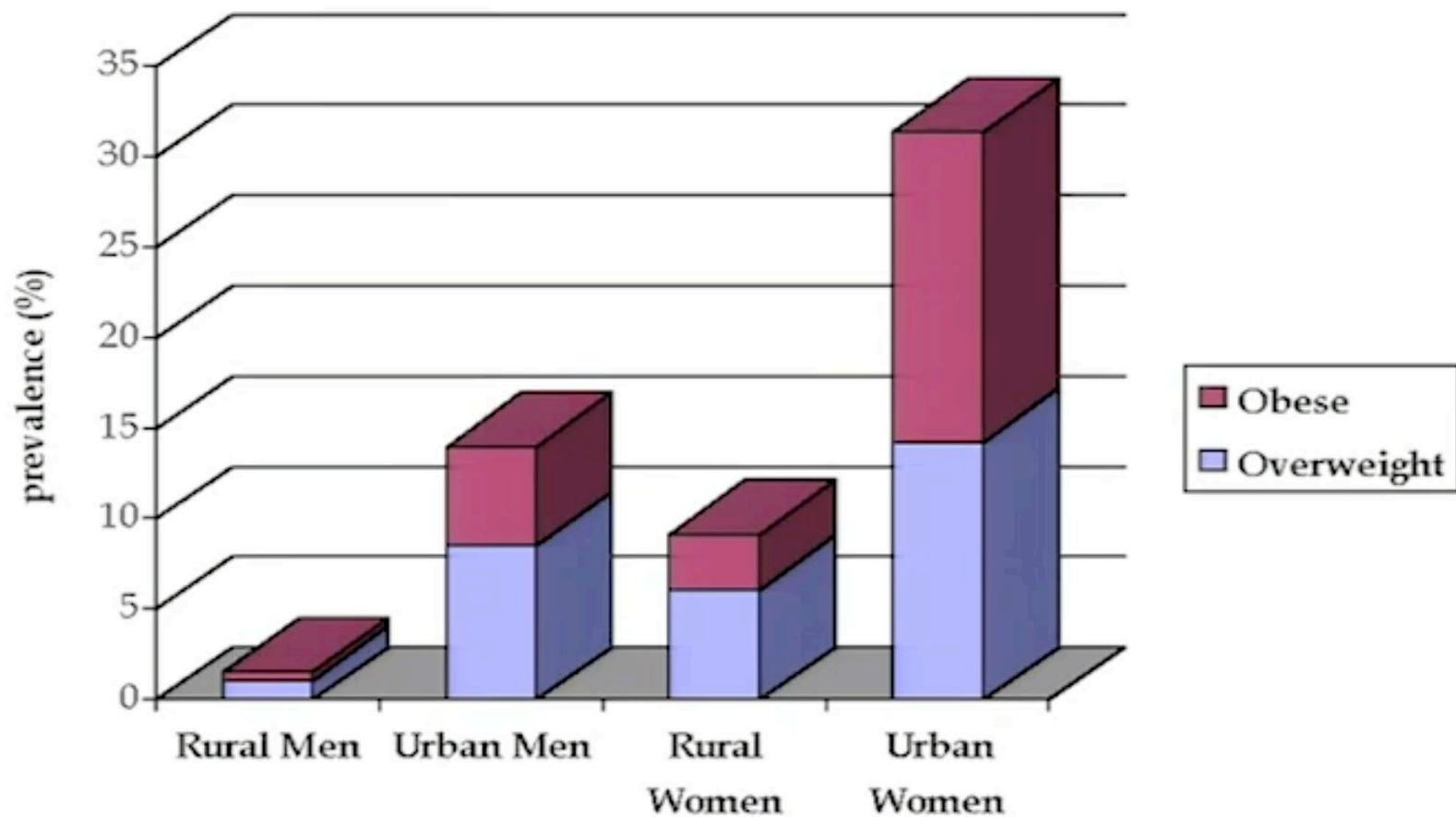
Prevalence of Hypertension (140/90 mmHg) by Age in Rural and Urban Nigeria: Men and Women

Stroke mortality in adults aged 30-69 years, in Nigeria, Tanzania and other selected countries, projections for 2005.
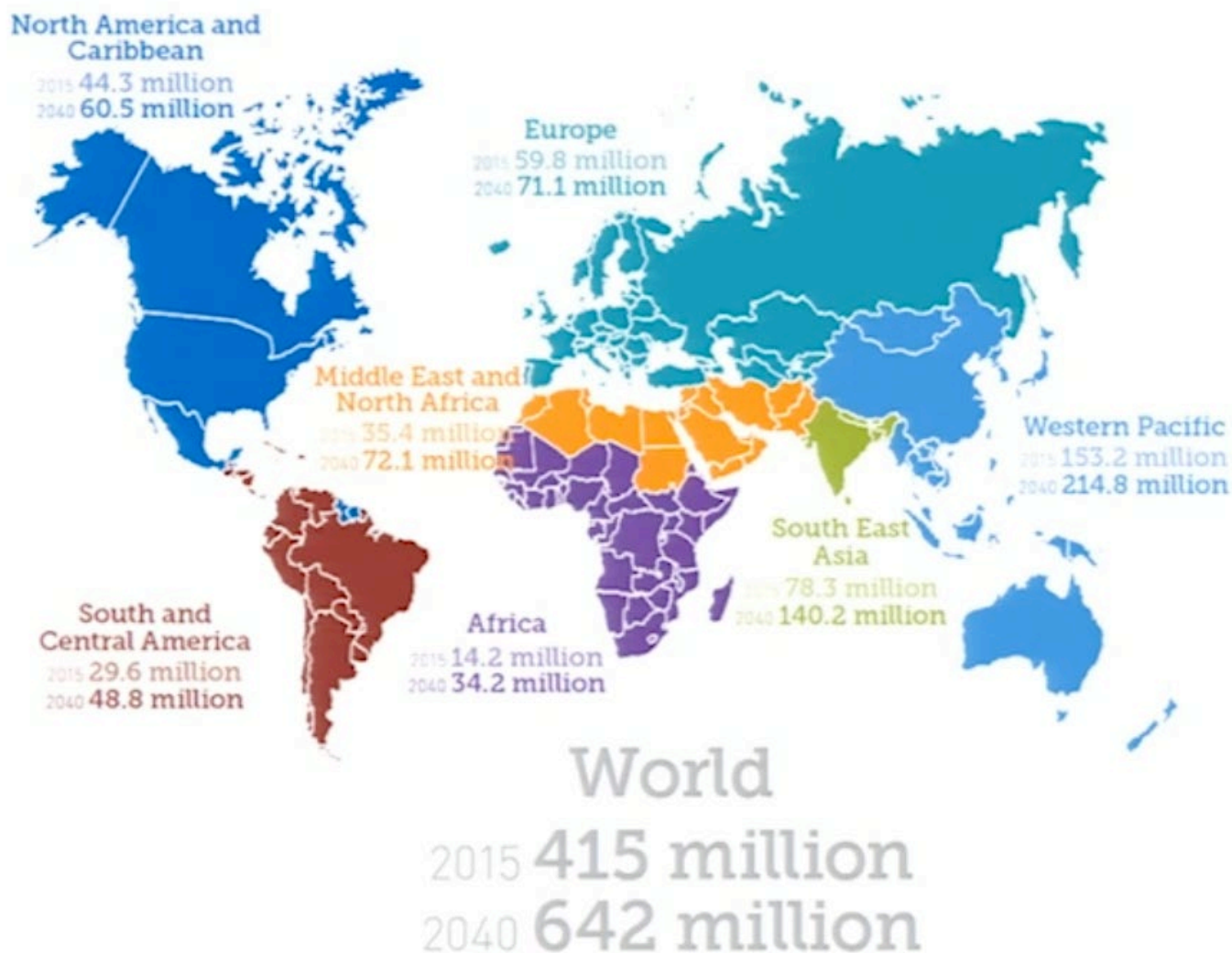
Mensah G A Heart 2008;94:697-705

HEART

14 MILLION PEOPLE LIVING WITH DIABETES

Estimated number of people with diabetes worldwide and per region in 2015 and 2040 (20-79 years)

North America and Caribbean
2015 44.3 million
2040 60.5 million

Europe
2015 59.8 million
2040 71.1 million

Middle East and North Africa
2015 35.4 million
2040 72.1 million

Western Pacific
2015 153.2 million
2040 214.8 million

South East Asia
2015 78.3 million
2040 140.2 million

South and Central America
2015 29.6 million
2040 48.8 million

Africa
2015 14.2 million
2040 34.2 million

World
2015 415 million
2040 642 million

IDF Diabetes Atlas, 7th edition

REVIEW: Consequences of Fetal Exposure to Maternal Diabetes in Offspring

Lila-Sabrina Fetita, Eugène Sobngwi, Patricia Serradas, Fabien Calvo, and Jean-François Gautier

Fetita LS, et al. J Clin Endocrinol Metab 91: 3718–3724, 2006

What is the contribution of epigenetics to the rise of diabetes and other NCDs in Africa?

Investigation of specific *in utero* exposures

MS OF DISEASE

Mechani

Effect o   to type 2 diabetes

Eugène Sobngwi, Philippe Boudou, Franck Mauvais-Jarvis, Hervé Leblanc, Gilberto Velho, Patrick Vexiau, Raphaël Porcher, Samy Hadjadj, Richard Pratley, P Antonio Tataranni, Fabien Calvo, Jean-François Gautier

Sobngwi E, et al. The *Lancet* 2003; 361: 1861–65

RODAM: Research on Obesity and type 2 Diabetes mellitus among African Migrants

BACKGROUND

EUROPEAN POPULATION

DIABETES

↓

8,6%

OBESITY AND OVERWEIGHT

↓

60%

ETHNIC MINORITY POPULATION IN EUROPE

DIABETES

↓

17%

OBESITY AND OVERWEIGHT

↓

65%

COMPLICATIONS:
cardiovascular diseases

Reference: Misra A, Khurana L: Obesity and the metabolic syndrome in developing countries. J Clin Endocrinol Metab 2008

RODAM HYPOTHESIS
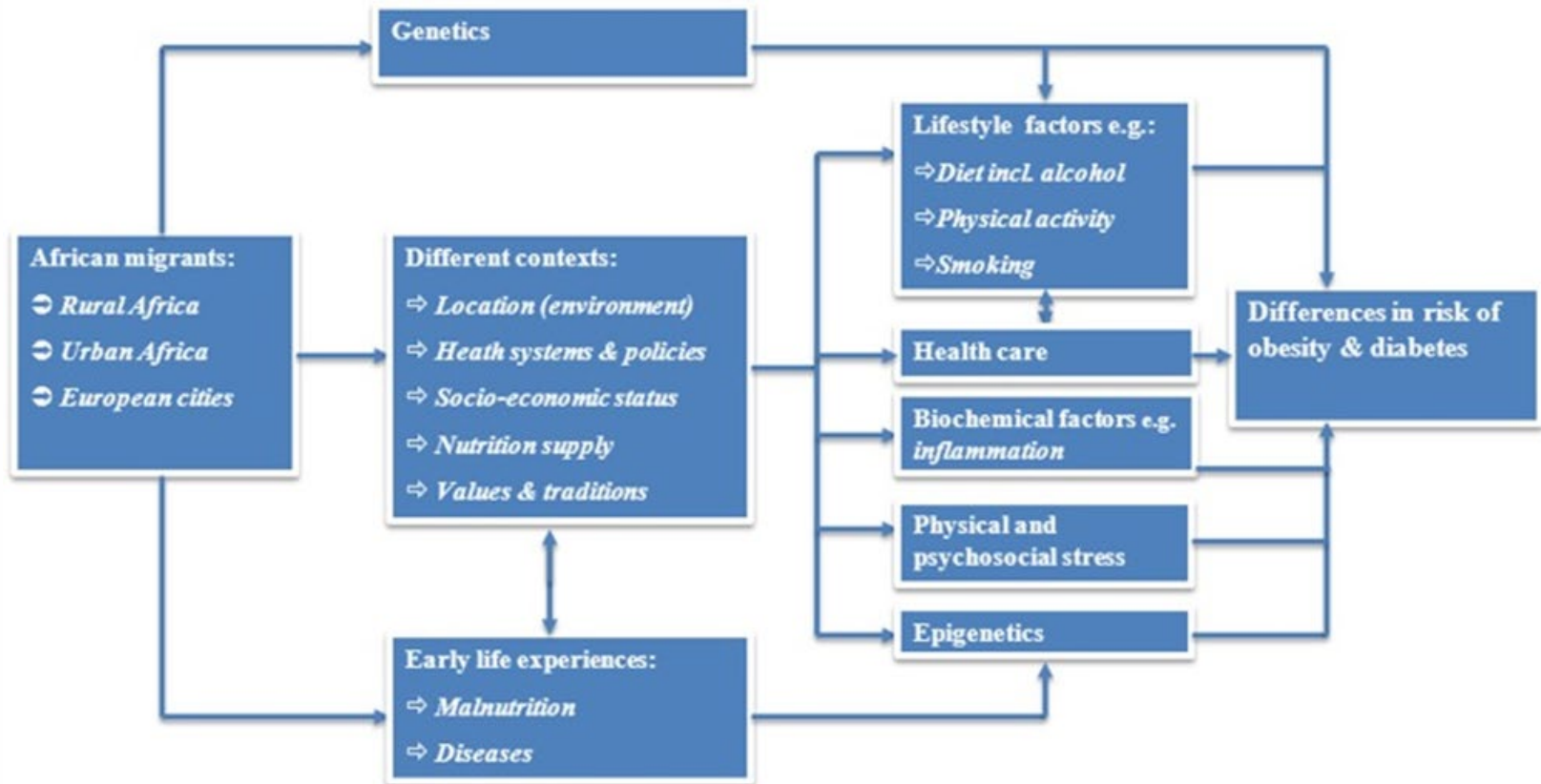
RODAM AIMS ➡️

- ➤ **Prevalence**
- ➤ **Risk factors**
- ➤ **Improve diagnosis**

Is social support associated with hypertension control among Ghanaian migrants in Europe and non-migrants in Ghana? The RODAM study : Social support hypertension control among a SSA migrant population.

Dyslipidaemia among Ghanaian migrants in three European countries and their compatriots in rural and urban Ghana: The RODAM study.

Differential associations between psychosocial stress and obesity among Ghanaians in Europe and in Ghana: findings from the RODAM study.

Perceived discrimination and stressful life events are associated with cardiovascular risk score in migrant and non-migrant populations: The RODAM study.

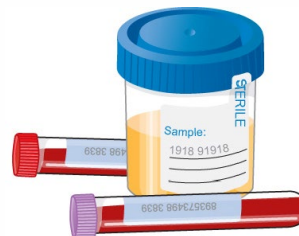**Differences in alcohol consumption and drinking patterns in Ghanaians in Europe and Africa: The RODAM Study.**

Epigenome-wide association study in whole blood on type 2 diabetes among sub-Saharan African individuals: findings from the RODAM study.
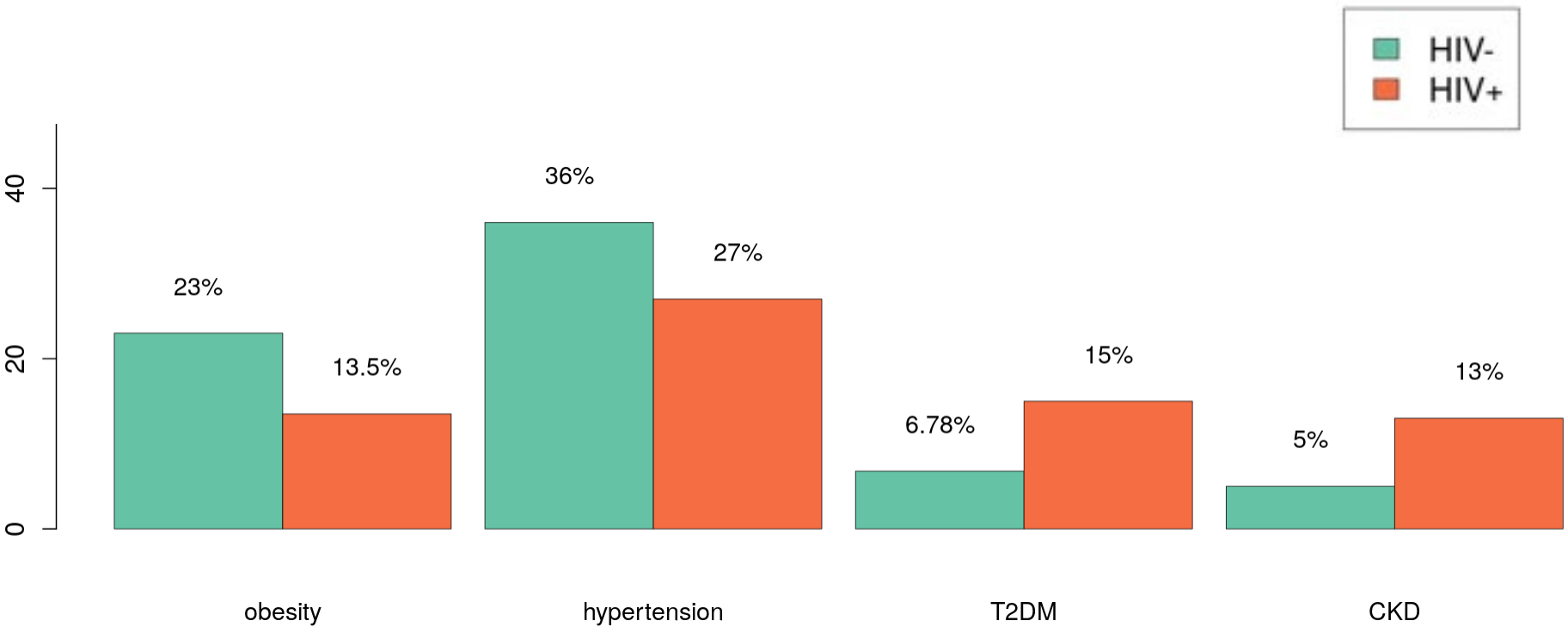
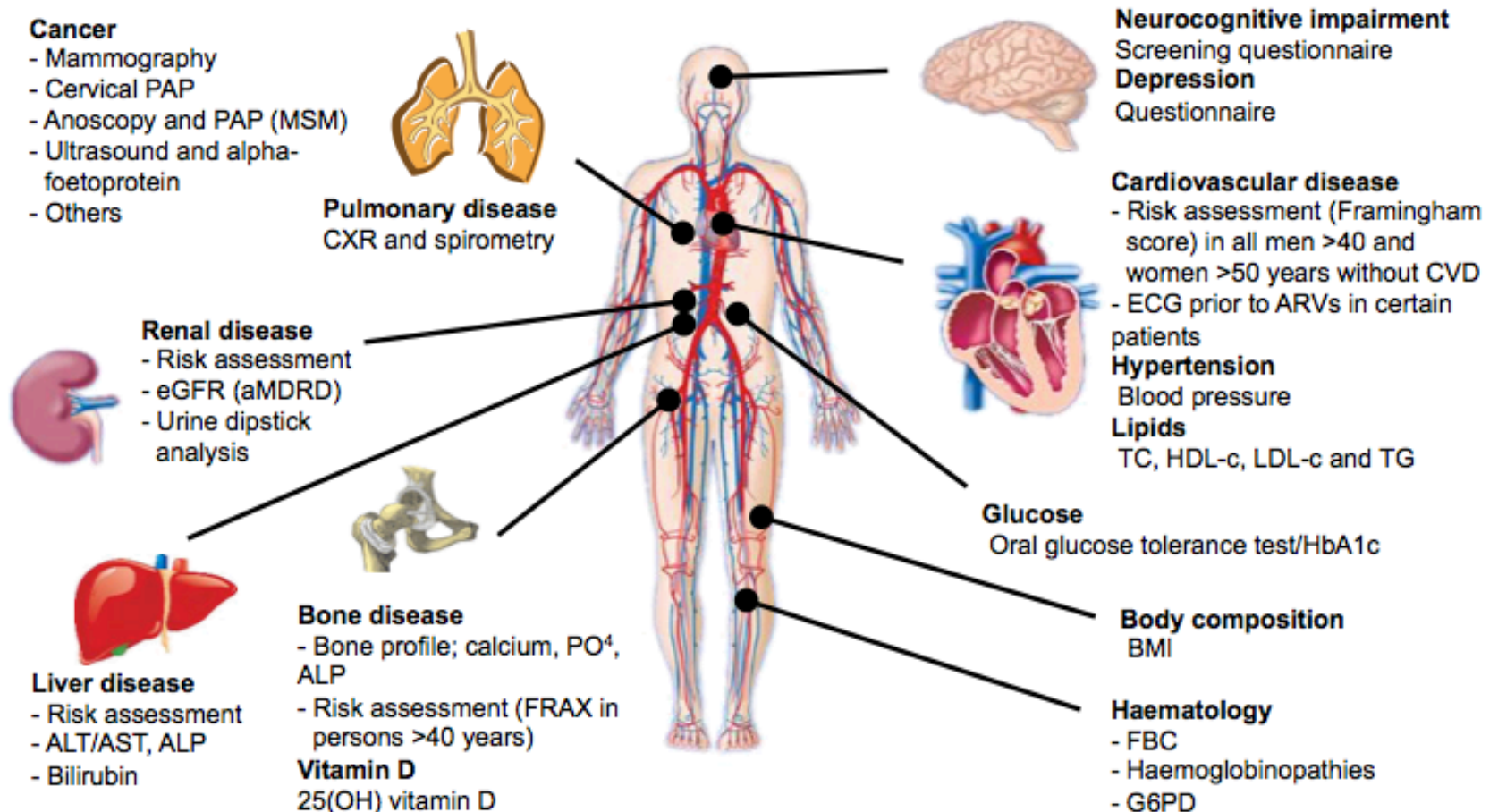Multicenter cross-sectional observational study

Community Based
Participatory action protocol

Ghanian and Nigerian NCDs prevalence in 170 comunity dwelling people in comparison to 88 PLWH

EACS Guideline Recommendations for Screening for Comorbidities*

Cancer
- Mammography
- Cervical PAP
- Anoscopy and PAP (MSM)
- Ultrasound and alpha-foetoprotein
- Others

Pulmonary disease
CXR and spirometry

Renal disease
- Risk assessment
- eGFR (aMDRD)
- Urine dipstick analysis

Liver disease
- Risk assessment
- ALT/AST, ALP
- Bilirubin

Bone disease
- Bone profile; calcium, PO⁴, ALP
- Risk assessment (FRAX in persons >40 years)
Vitamin D
25(OH) vitamin D

Neurocognitive impairment
Screening questionnaire
Depression
Questionnaire

Cardiovascular disease
- Risk assessment (Framingham score) in all men >40 and women >50 years without CVD
- ECG prior to ARVs in certain patients
Hypertension
Blood pressure
Lipids
TC, HDL-c, LDL-c and TG

Glucose
Oral glucose tolerance test/HbA1c

Body composition
BMI

Haematology
- FBC
- Haemoglobinopathies
- G6PD

* See guidelines for detail on follow-up frequency, subgroups to be screened and further information

EACS guideline version 7.0, October 2013; Available at:: http://www.eacsociety.org/Portals/0/Guidelines_Online_131014.pdf (accessed Apr 2014).

	EU	Migrant
population	1809(91.41%)	170(8.59%)
Female	480 (26.53%)	79 (46.47%)
Age	52.55 (8.23)	46.18 (10.18)
waist	90.7 (11.41)	94.16 (63.76)
BMI	24.27 (4.18)	25.34 (5.26)
obesity	126 (7.19%)	22 (13.5%)
ivdu yes	442 (24.43%)	7 (4.12%)

Age distribution
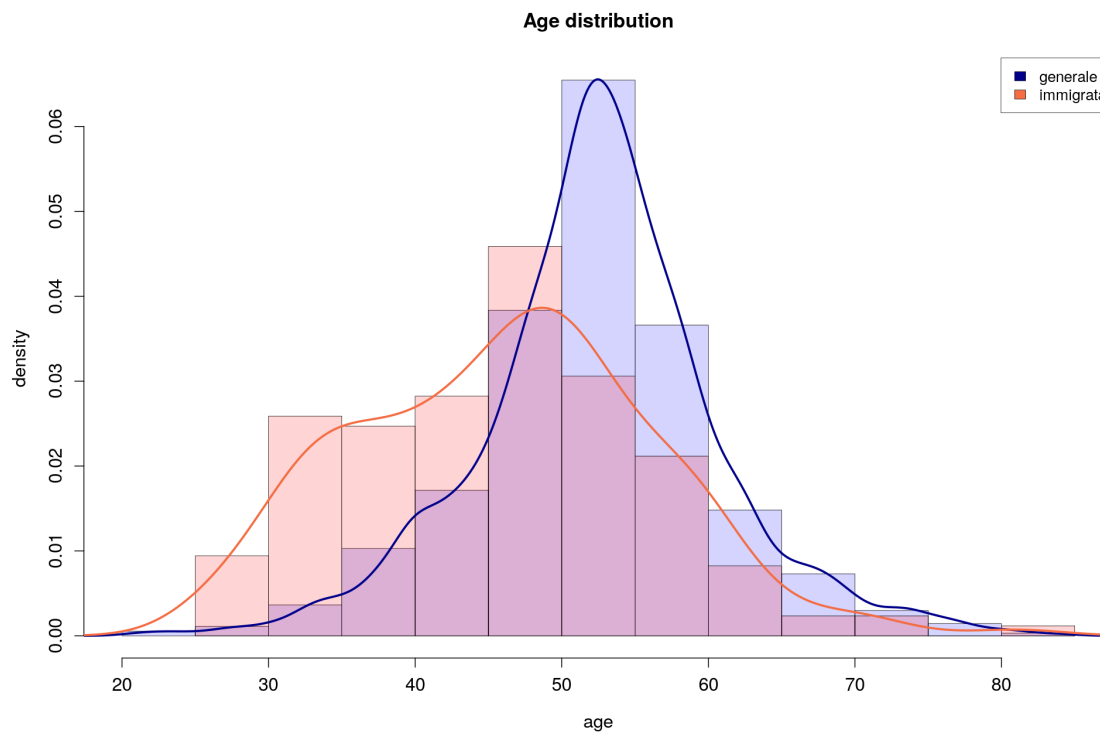
	EU	Migrant
population	1809(91.41%)	170(8.59%)
Duration HIV	251.15 (103.26)	168.13 (90.65)
Current Cd4	736 (550-928)	616 (458.25-766)
CD4/CD8	0.98 (0.49)	0.86 (0.48)
VL>40 c	1793 (99.12%)	152 (89.41%)
DUAL-ARV	481 (26.66%)	24 (15.89%)
Triple-ARV	1207 (66.91%)	117 (77.48%)
MEGA-ARV	41 (2.27%)	6 (3.97%)
INSTI	36 (16-77)	36.5 (9.5-65.75)
IP	105 (49-157)	70.5 (33.5-116)
NNRTI	69 (27-124)	50.5 (15-84.75)

Comparison of NCDs prevalence in EU and Migrant PLWH attending MHMC

Take home message

- ✓ A protracted-and polarized health transition model is rapidly expanding in resource limited countries
- ✓ HIV alter the paradigm of healthy migrant
- ✓ NCDs in migrant PLWH are highly prevalent but still less prevalent that EU PLWH in consideration to a younger age distribution
- ✓ Specific environmental, life style and epigenetic factor need to be recognised and tackled to reduce future multimorbidity burden