12th International Symposium on Neuropsychiatry & HIV, Barcelona 2019

Prevalence of mental health problems among people living with HIV

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Antiretrovirals, Sexual Transmission Risk and Attitudes

Outline

- Measuring mental health problems
- Prevalence among people with HIV in Europe
- Comparison to HIV-negative people
- Comparison to people with other long-term health conditions
- Variation by socio-demographics and time with HIV

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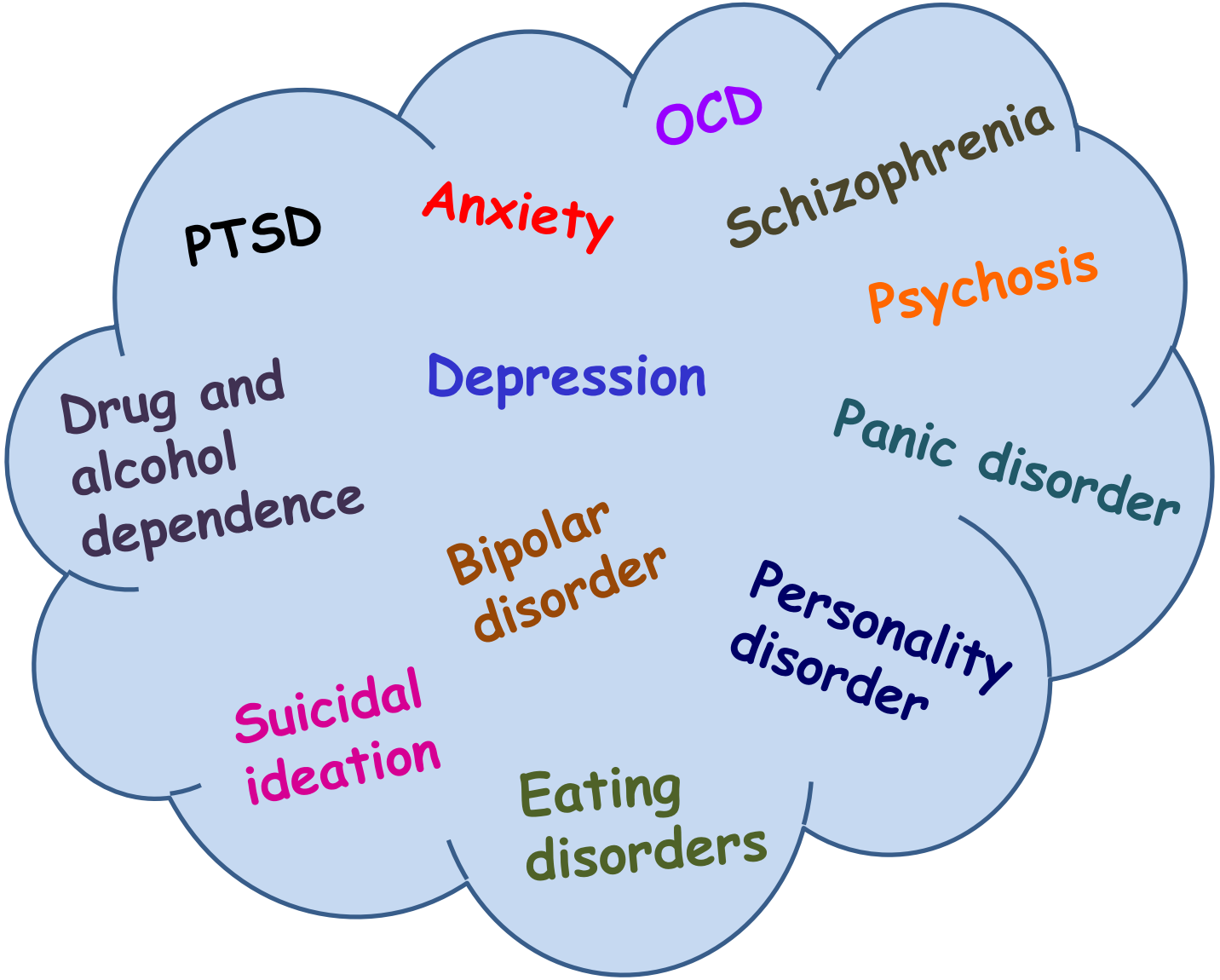
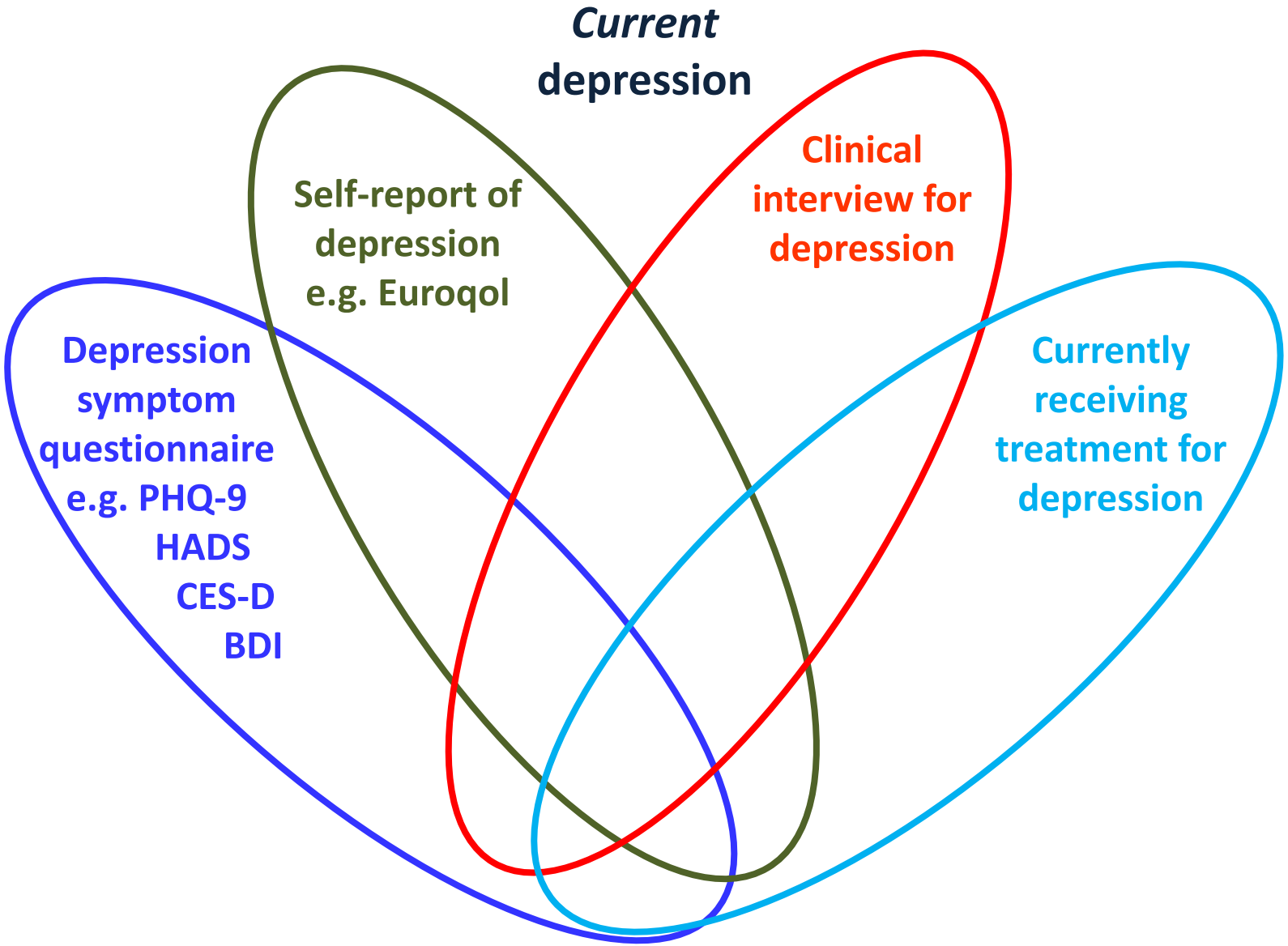
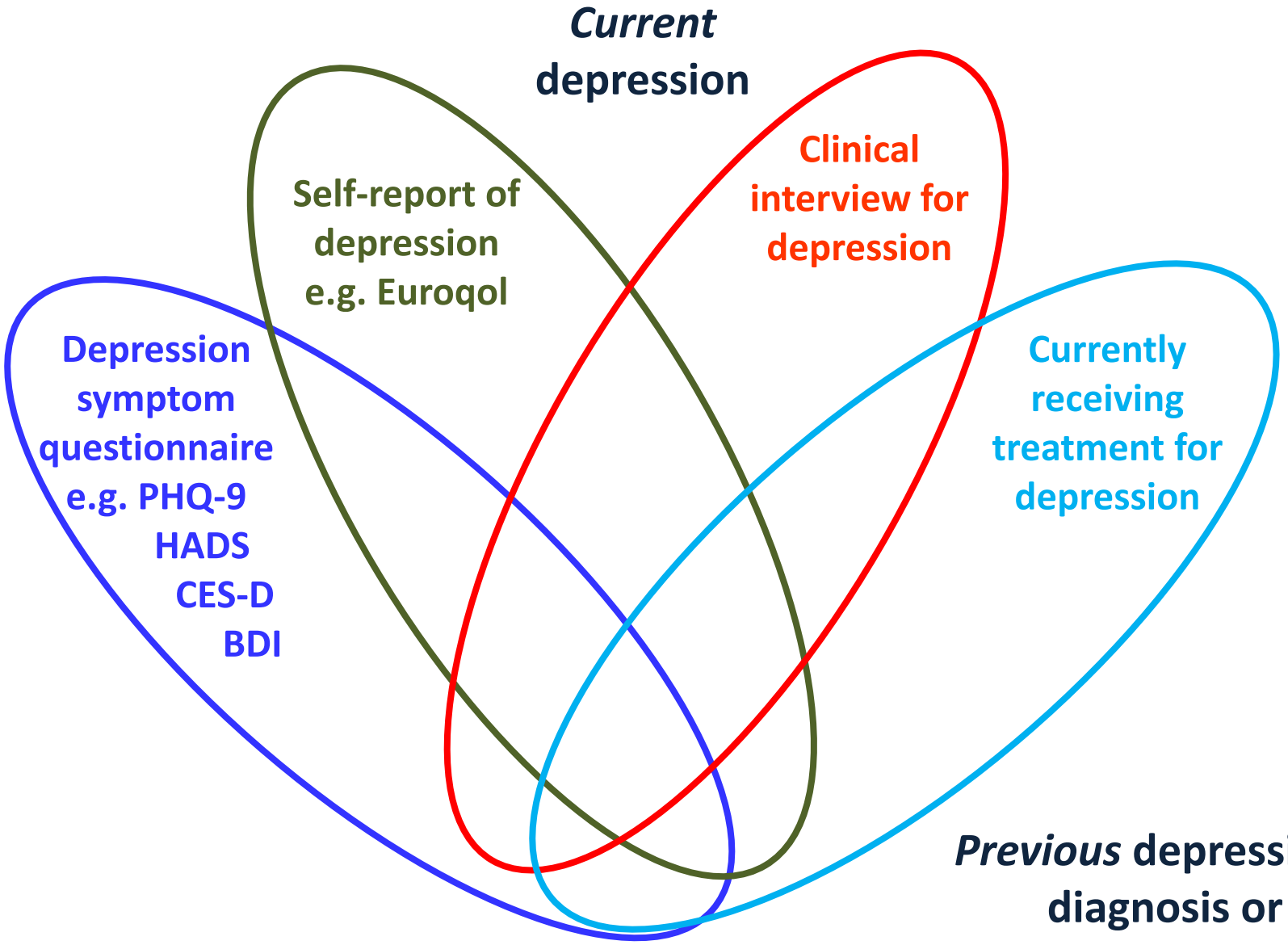
Mental health disorders



Measuring depression prevalence



Measuring depression prevalence



Previous **depression: symptoms, diagnosis or treatment**

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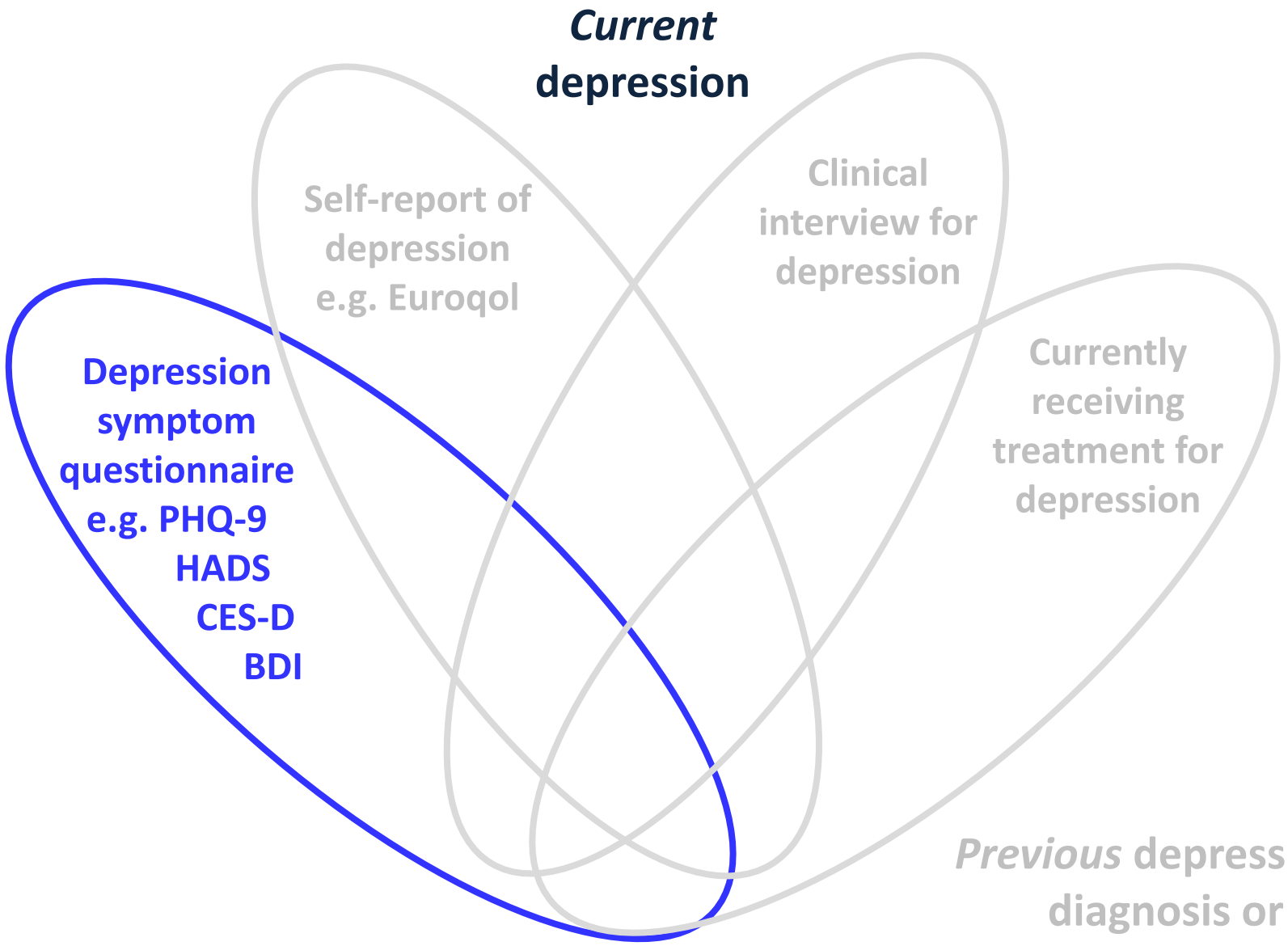
Research on mental health among HIV-positive people in Europe

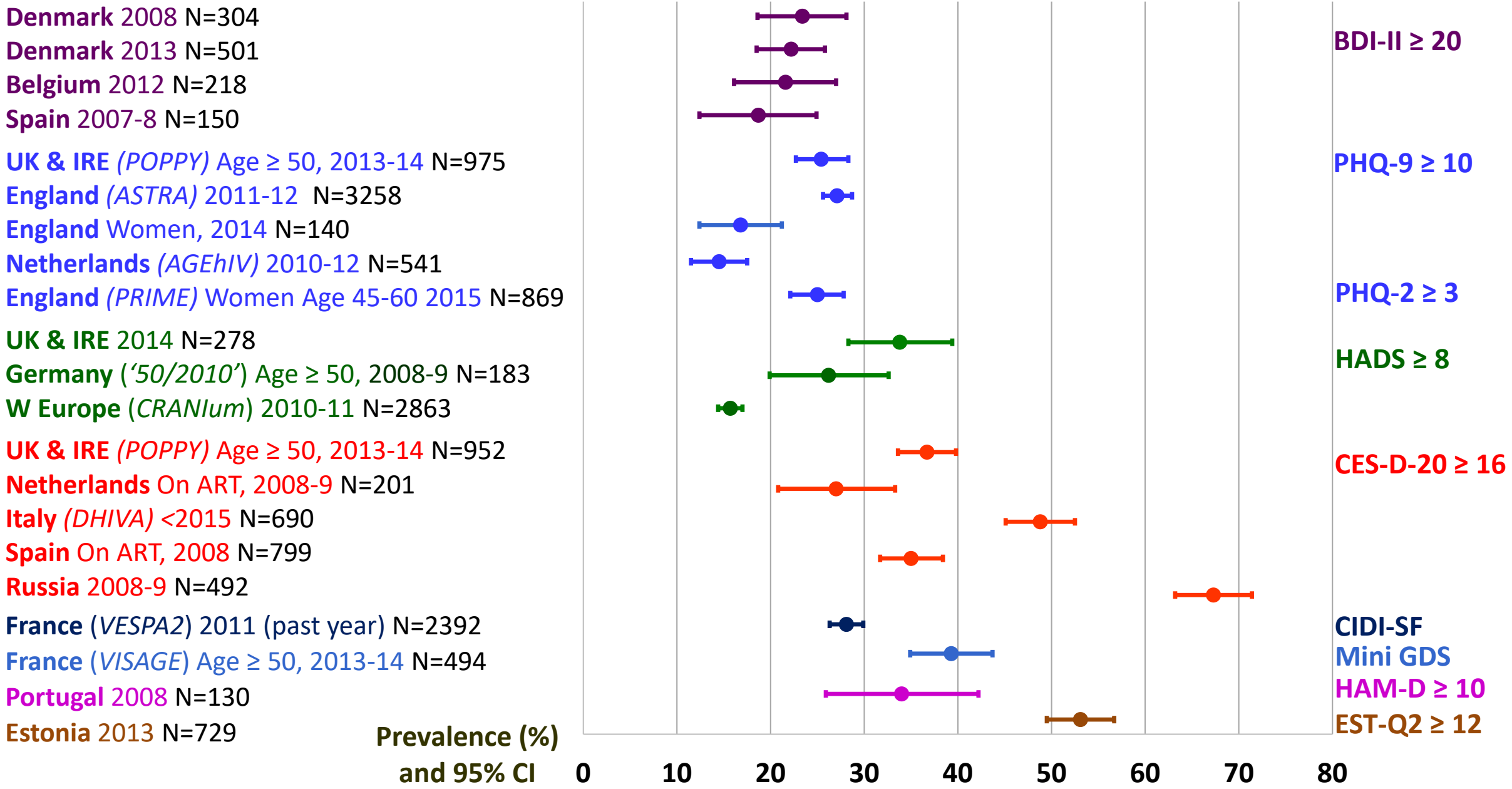
- Observational studies measuring mental health variables in HIV-positive people in **Europe in 2008-2018**
- Studies from at least 20 European countries (depression; quality of life; anxiety; other)

Albania: *Morrison, J Infect Dev Ctries 2014, Croat Med J 2011*
Belgium: *Degroote, Acta Clin Belgica 2014*
Denmark: *Rodkjaer, Int J Infect Dis 2014, HIV Med 2016; Slot, HIV Med 2015,*
Estonia: *Lemsalu, AIDS Beh 2017*
Finland: *Nobre, AIDS Care 2016*
France: *Figuero, HIV Med 2010; Cuzin, HIV Med 2016; Feuillet, HIV Med 2017; Carrieri, PLoS ONE 2017, Enel AIDS Care 2018*
Germany: *Ronel, Psychol Hlth Med 2018*
Italy: *Marando, AIDS Care 2016; Venturini, AIDS Care 2017*
Netherlands: *Sumari-de Boer, AIDS Beh 2012; Oberje, AIDS Beh 2015; Langebeek, AIDS 2017; Verbooy AIDS Care 2018; Engelhard, AIDS 2018*
Norway: *Eller, AIDS Care 2010*
Poland: *Nobre, AIDS Care 2016; Rzeszutek, Arch Wom Hlth 2018*
Portugal: *Braganca, AIDS Beh 2011; Nobre, AIDS Care 2016; Monteiro, AIDS Care 2016; Maia, J Assoc Nur AIDS Care 2017; Serrao Int J Infect Dis 2019*
Romania: *Rsolul, AIDS Care 2018; Ursoiu, AIDS Care 2018*
Russia: *Lasser, PLoS ONE 2018*
Spain*: Briongos Figuero, HIV Med 2011; Bayon, Antiv Th 2012; Gutierrez, HIV Med 2014; Baller-Arnai, AIDS Beh 2016; Bayon-Perez, AIDS Care 2016; Fumaz, Eu J Psy 2019*
Sweden: *Zeluf-Andersson, AIDS Care 2019*
Switzerland: *Anagnostopoulos, PLoS ONE 2015*
Turkey: *Demirel, AIDS Care 2019*
UK & Ireland: *Miners, Lancet HIV 2014; O'Brien, Hlth Qual Out 2015; Underwood, HIV Med 2016; McGowan, HIV Med 2017; Sherr, J Vir Erad 2016; Patel, Int J STD AIDS 2016; Murphy, AIDS Care 2018; Tariq, PRIME-report 2018; De Francesco, HIV Med 2019*
Europe: *Robertson, AIDS Care 2014; Tirado-Munoz, Arch Wom Hlth 2018*

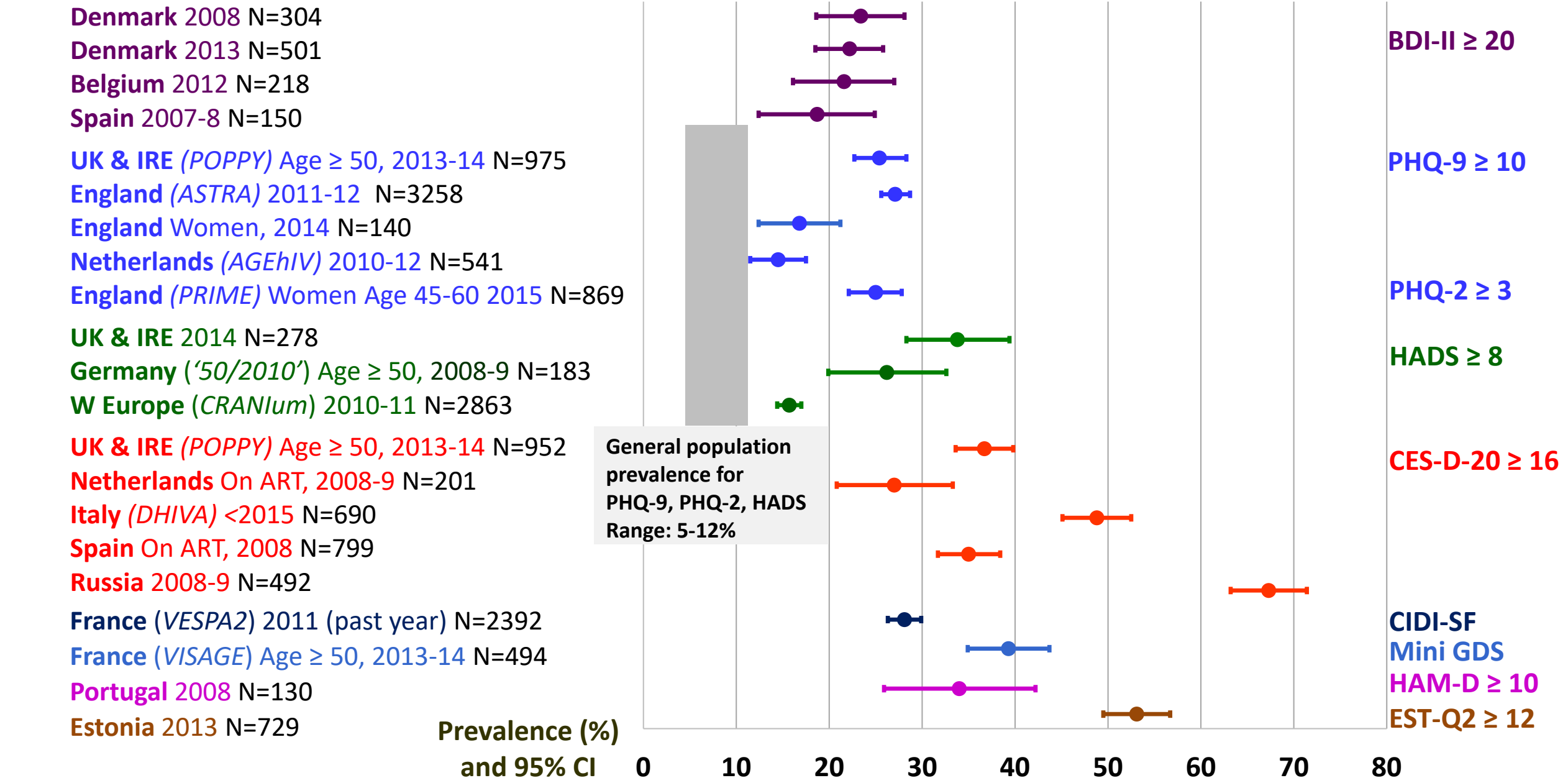
Measuring depression prevalence



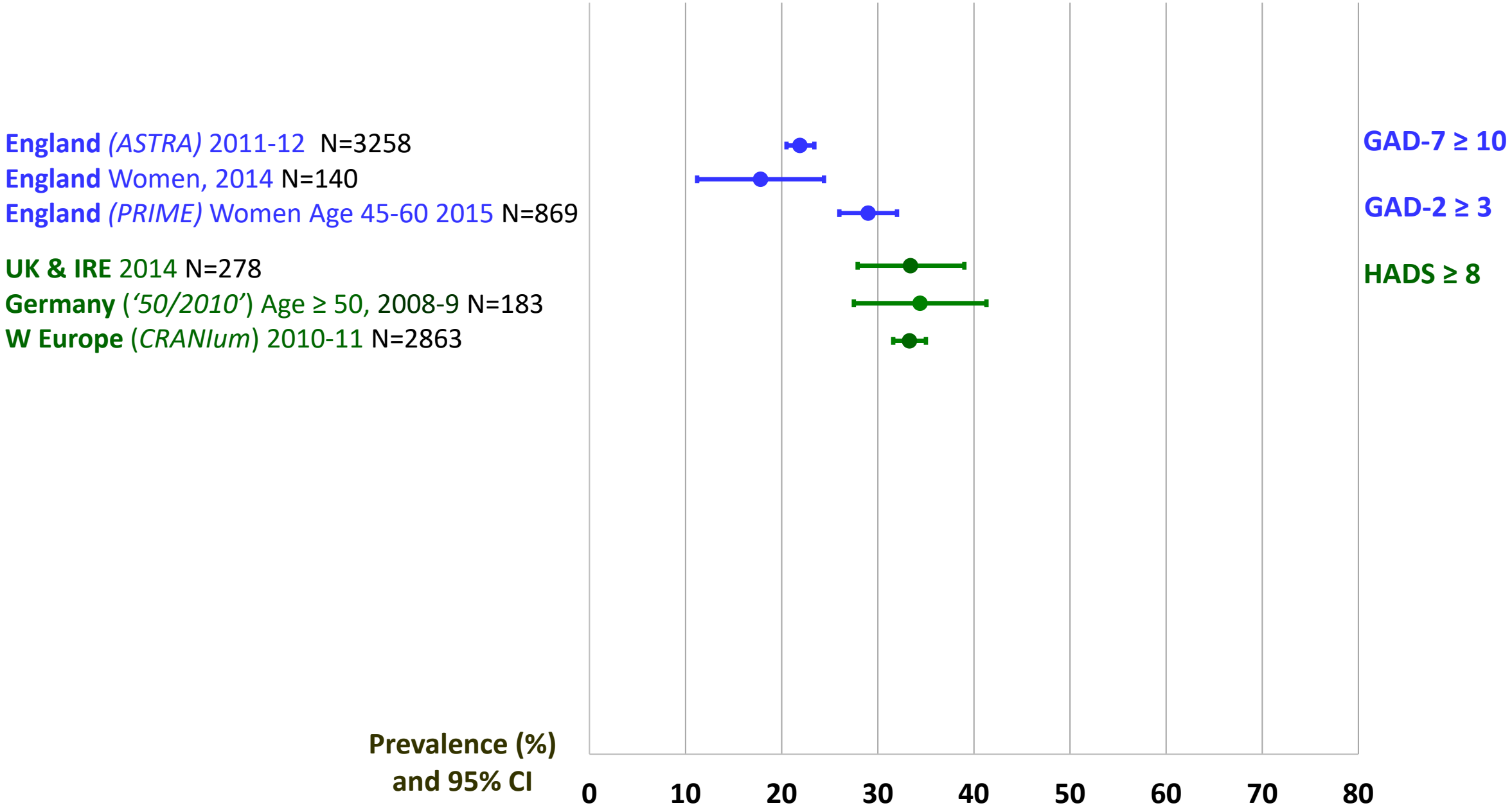
Depression - symptom questionnaire, HIV-positive, Europe



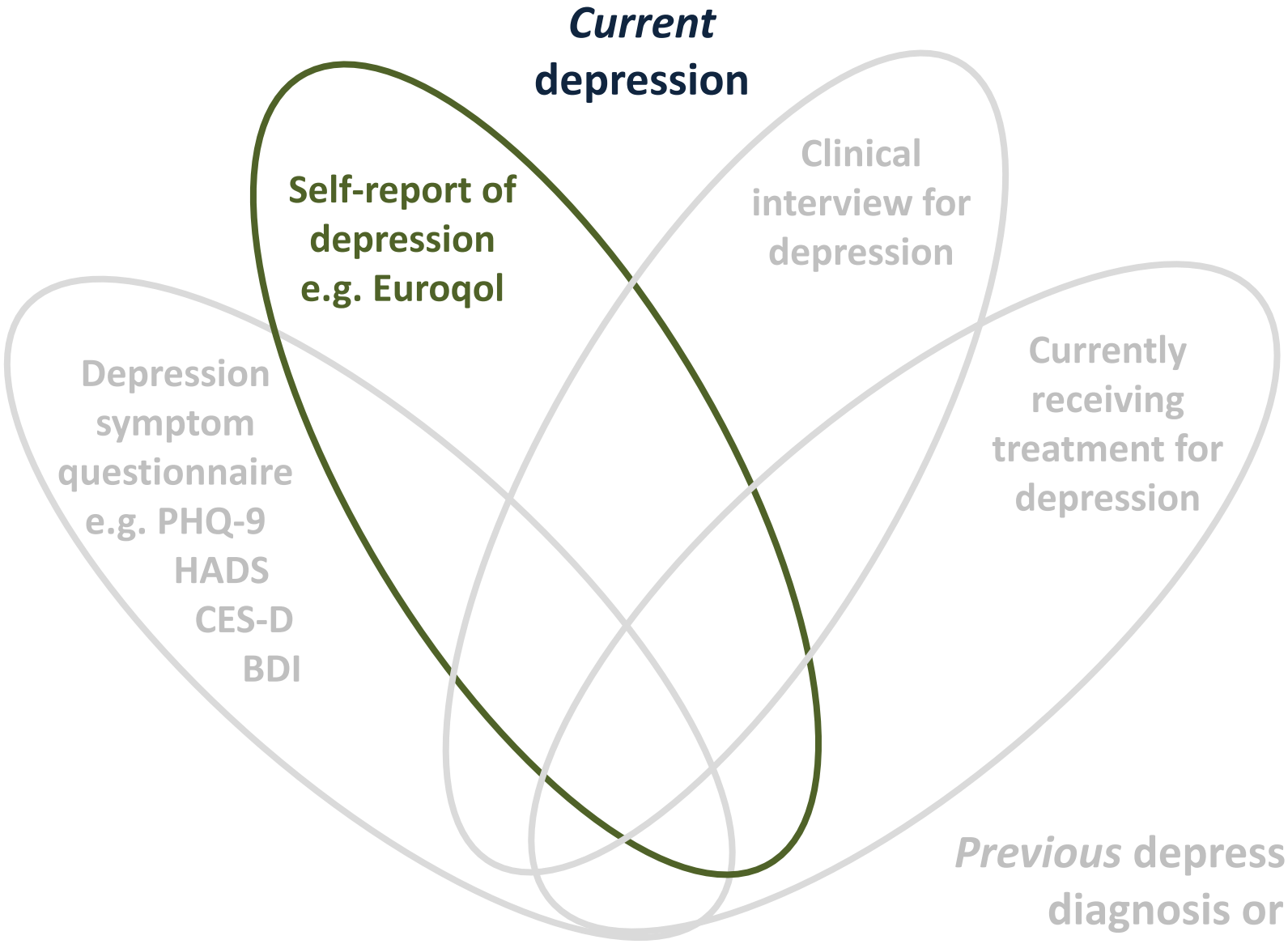
Depression - symptom questionnaire, HIV-positive, Europe



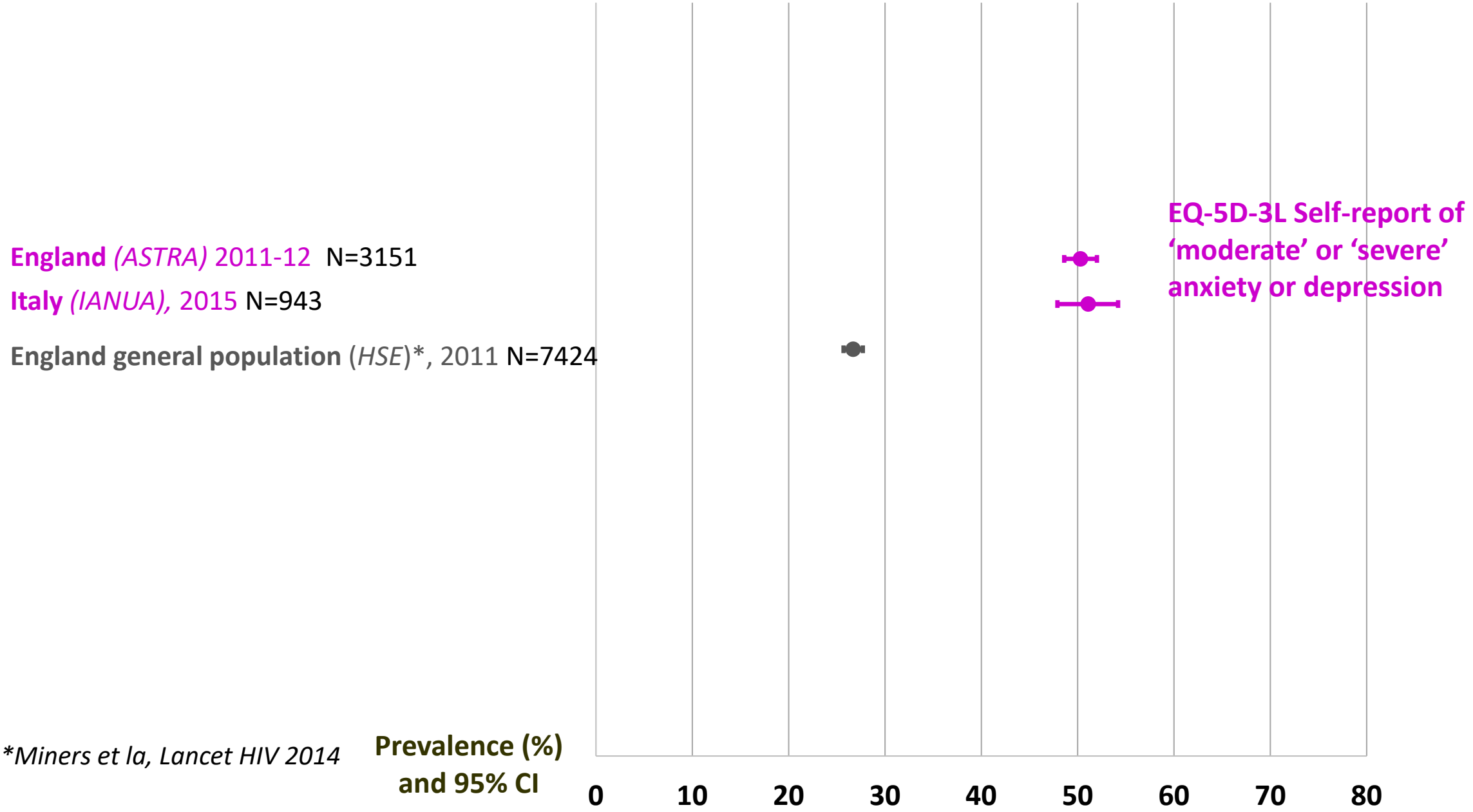
Anxiety - symptom questionnaire, HIV-positive, Europe



Measuring depression prevalence

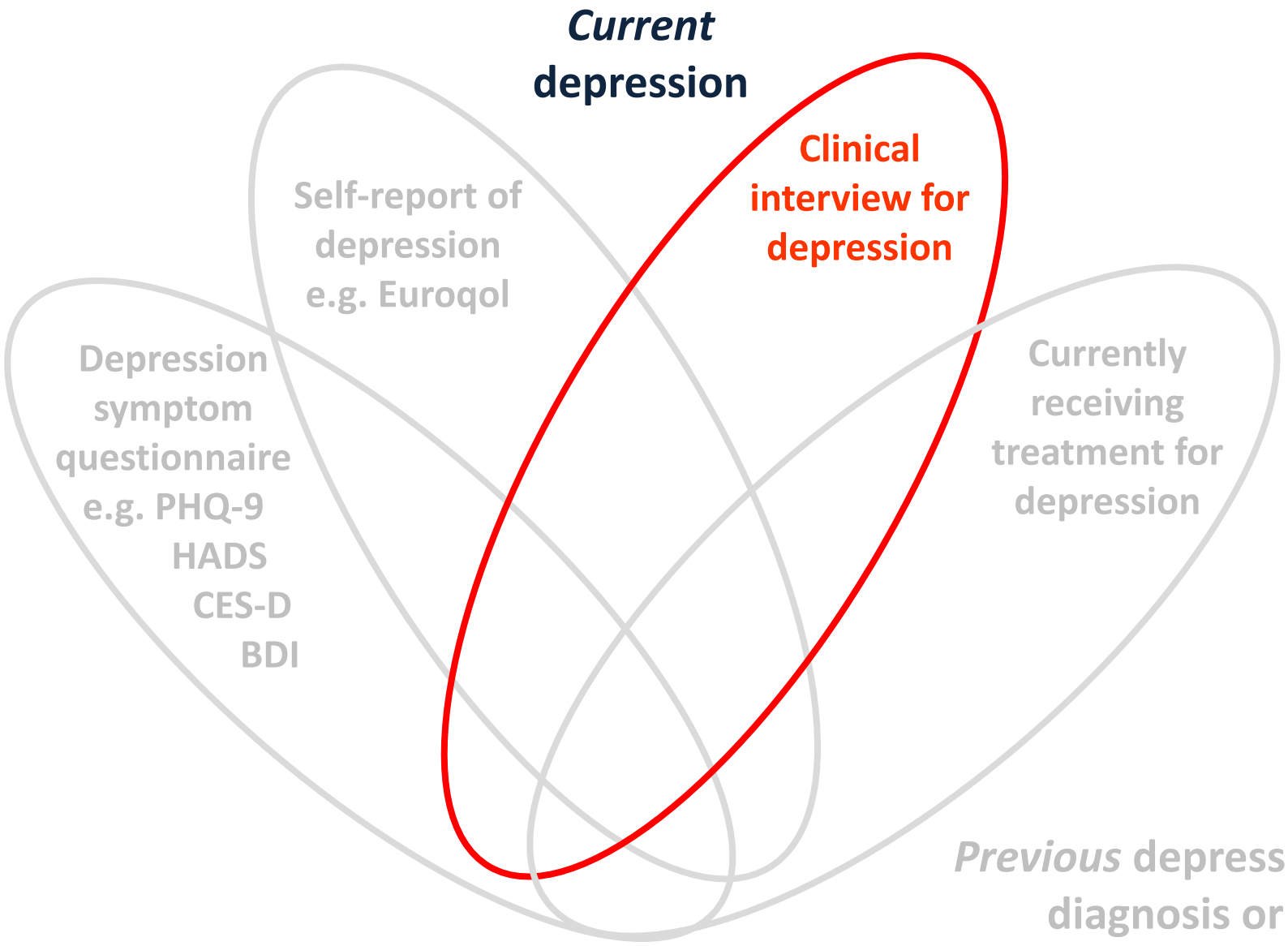


Depression / anxiety – self-report, HIV-positive, Europe



*Miners et la, Lancet HIV 2014

Measuring depression prevalence



Depression - clinical interview, HIV-positive, Europe

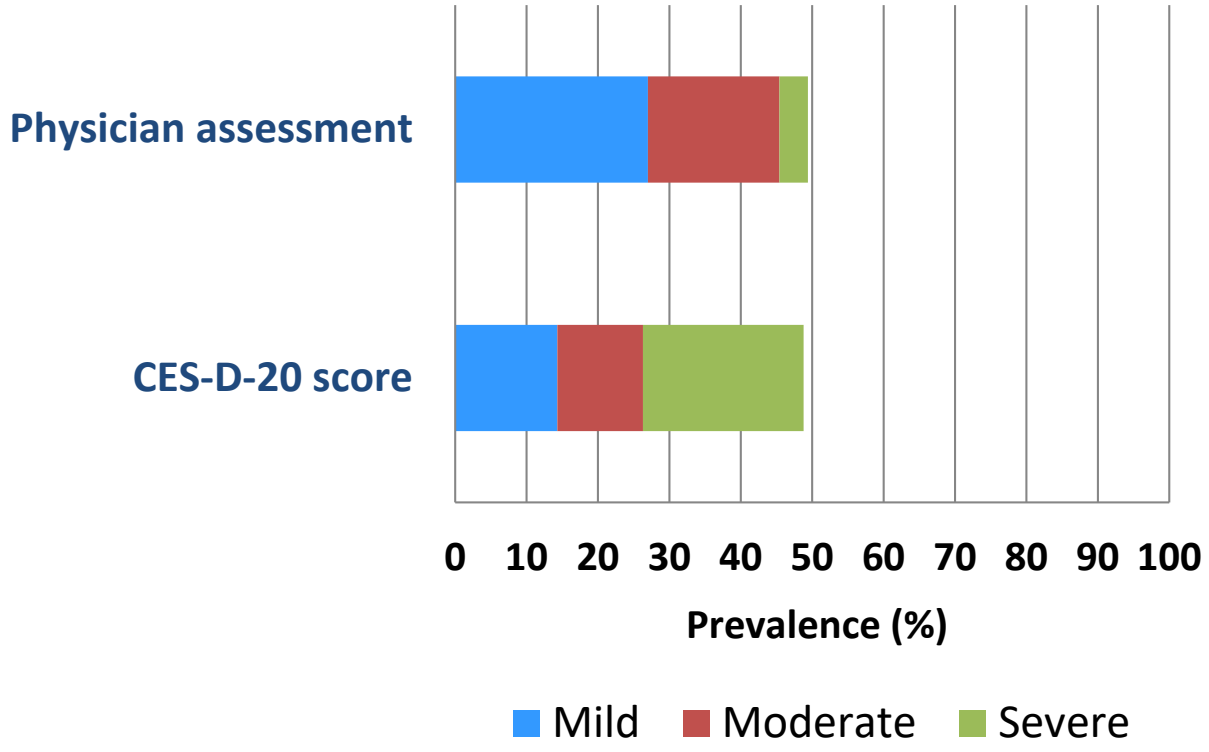
N=113 HIV-positive people on ART, no prior mental health diagnosis
Spain 2014

- Semi-structured interview by psychiatrist or psychologist
- Prevalence of undiagnosed depression: **21.2% (13.3%, 29.2%)**

Bayon-Perez et al. AIDS Care 2016

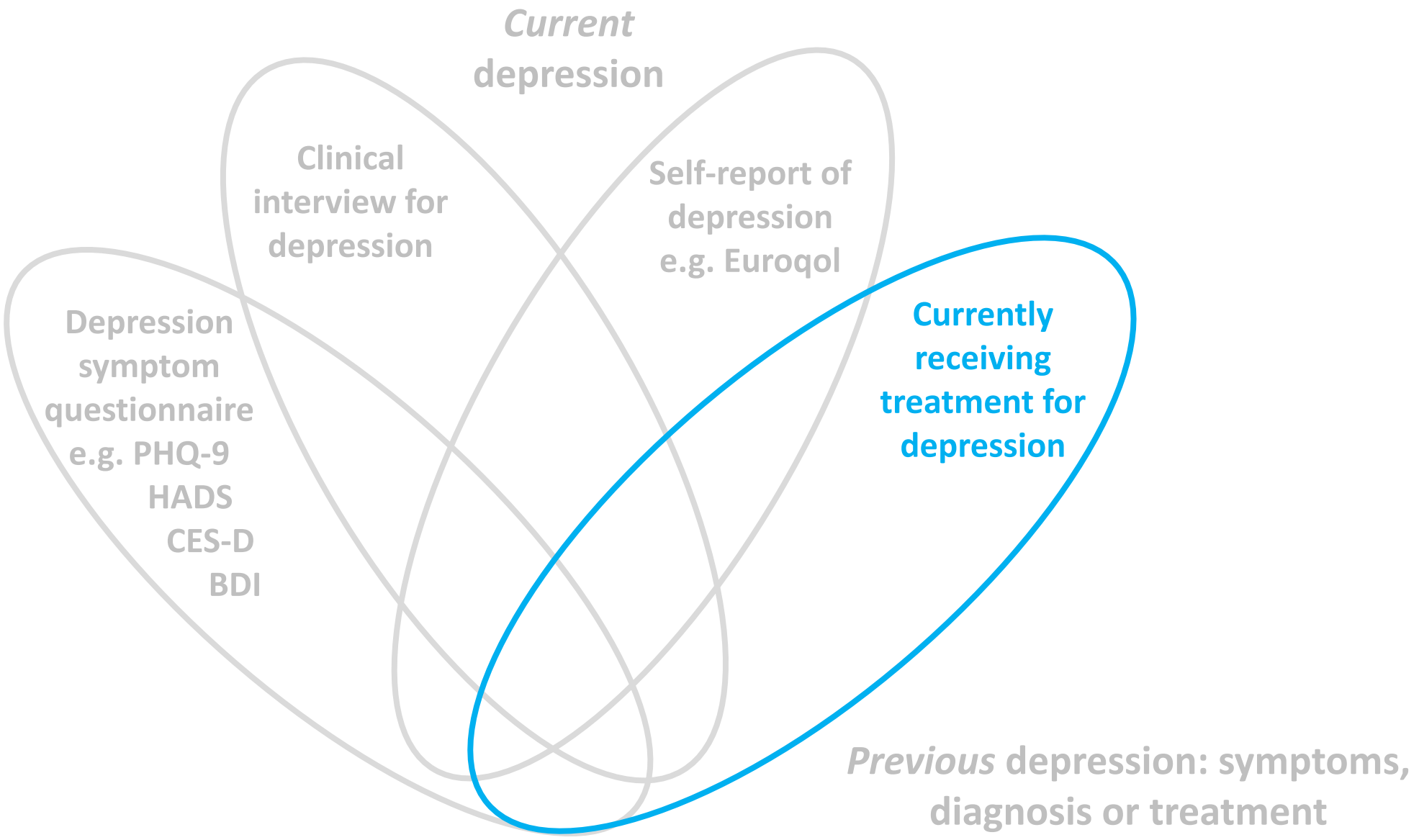
N=709 HIV-positive people
DHIVA Study, Italy <2015

Prevalence of depressive symptoms



Adapted from Marando et al. AIDS Care 2016

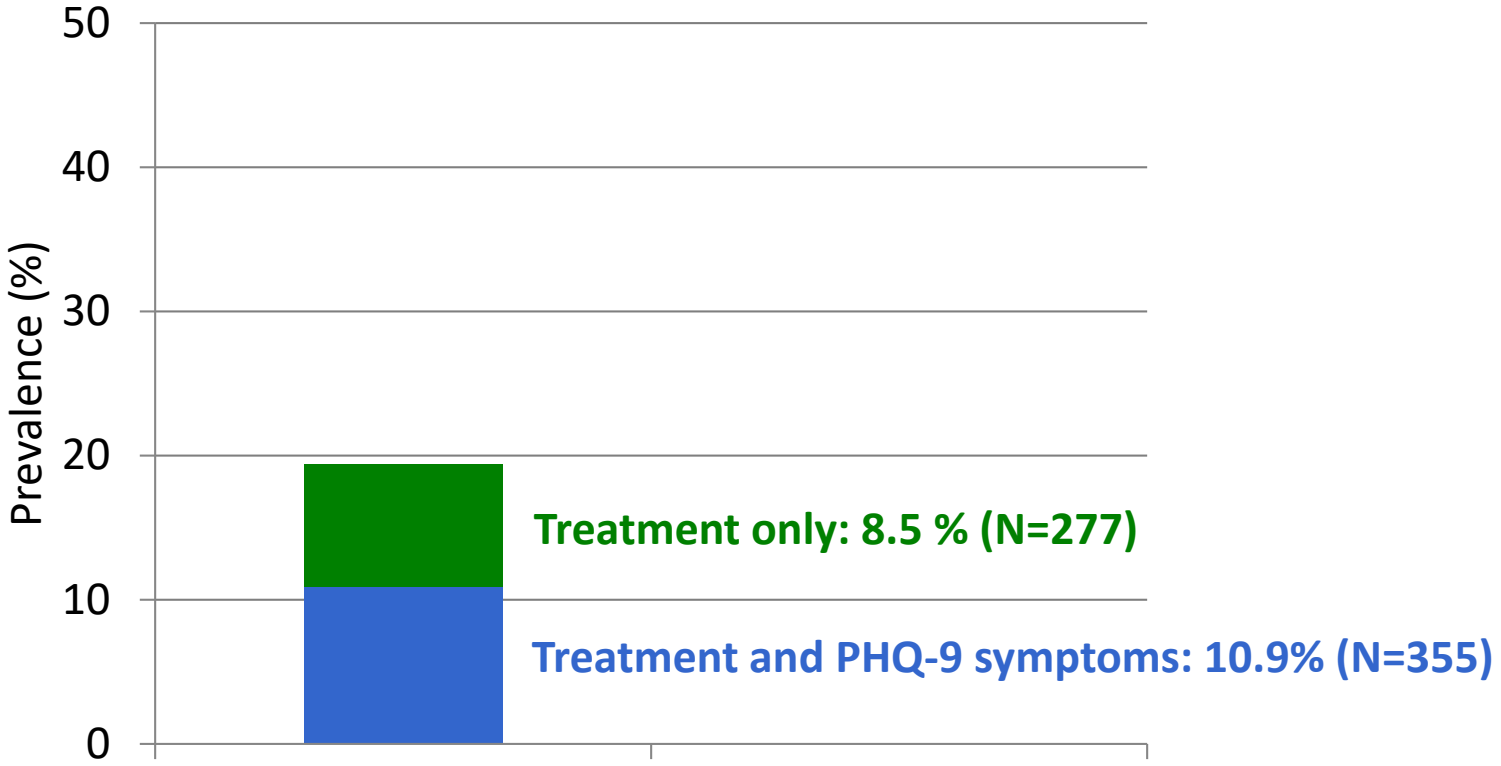
Measuring depression prevalence



Depression – receiving treatment, HIV-positive, England

N=3258 HIV-positive people

ASTRA Study, England 2011-2012



Treatment=medicine or other therapy for depression

PHQ-9 symptoms defined by PHQ-9 major or other depressive disorder (PHQ-9 DD)

Prevalence of treated depression: 19.4%

TOTAL with evidence of depression: 35.2% (N=1148)
of whom 516 (45.0%) were not receiving treatment

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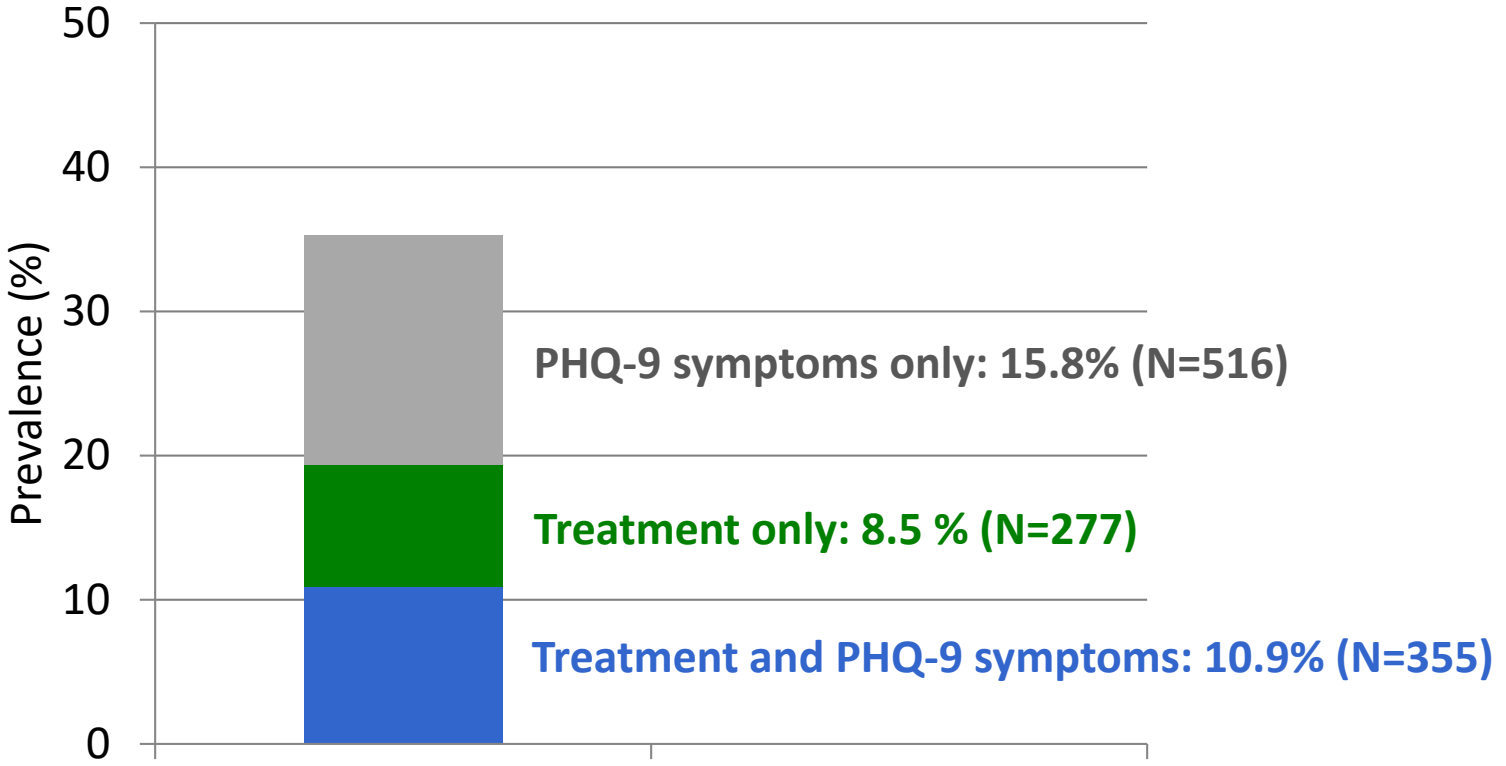

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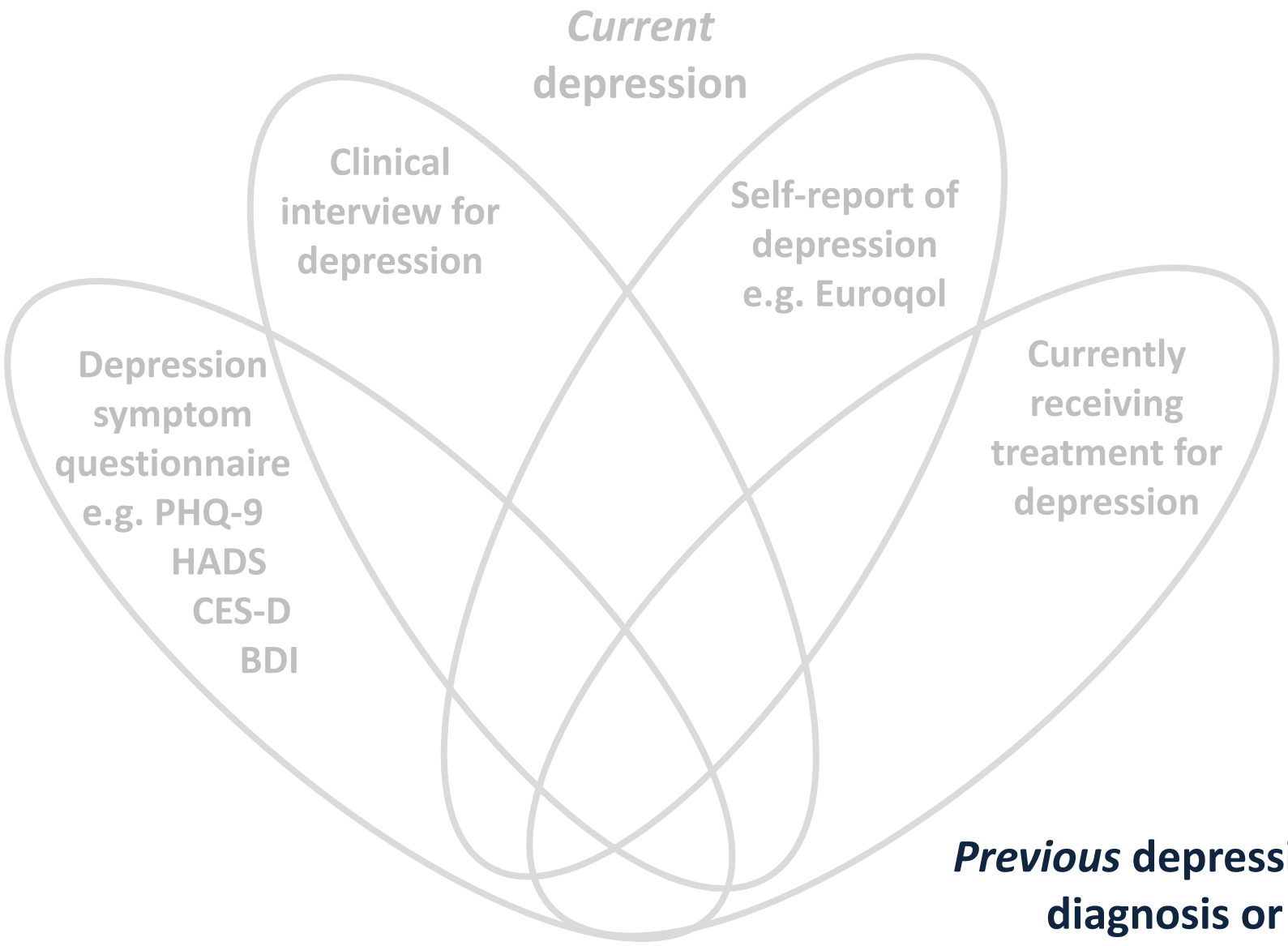
Measuring depression prevalence

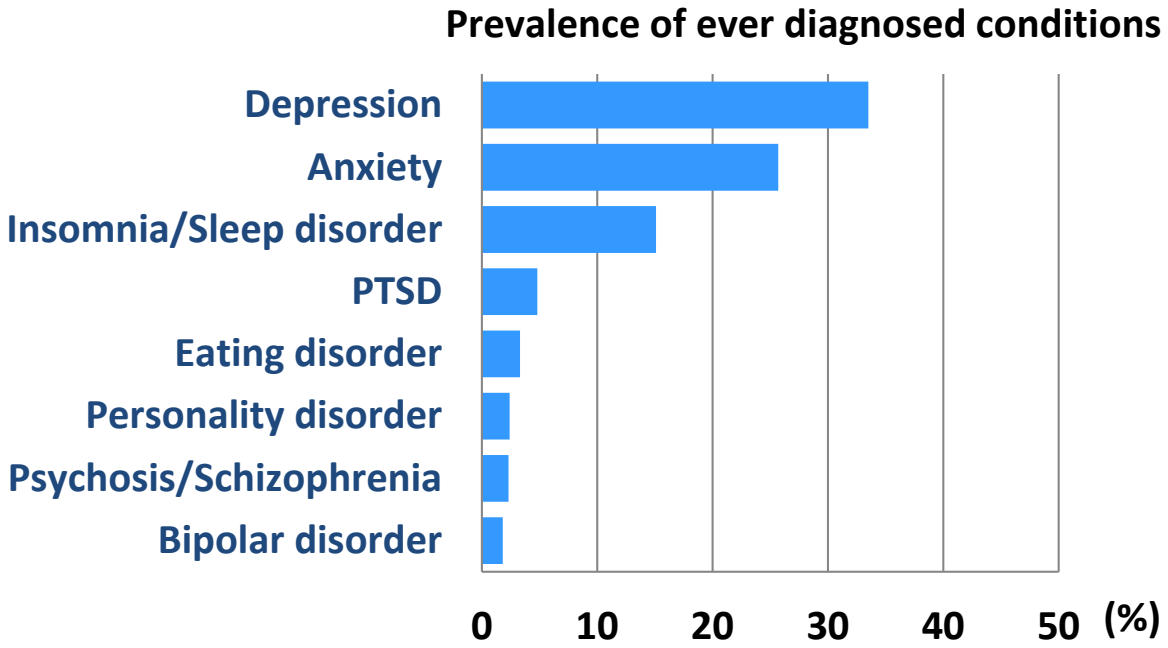


Previous **depression: symptoms, diagnosis or treatment**

Mental health – previous diagnosis, HIV-positive, Europe

N=4424 HIV-positive

Positive Voices Study, UK 2017



Acknowledgements, Meaghan Kall, Public Health England

N=401 HIV-positive

Portugal 2019

Percentage with diagnosis depression/chronic anxiety documented in medical records: 24%

Serrao et al. Int J Infect Dis 2019

N=2189 HIV-positive

GPRD cohort study, UK 2005

Percentage with primary care recorded symptoms or diagnosis of mental health problem *following* HIV diagnosis:

- 37.3% of men
- 27.0% of women

Evans et al. Sex Trans Infect 2009

N=79 HIV-positive

Albania 2009

Percentage with history of mental health diagnosis *following* HIV diagnosis:

- 62% had depression diagnosis
- 82% had anxiety diagnosis

Morrison et al. Croat Med J 2011

Psychotropic drug use: HIV-positive vs general population, Denmark

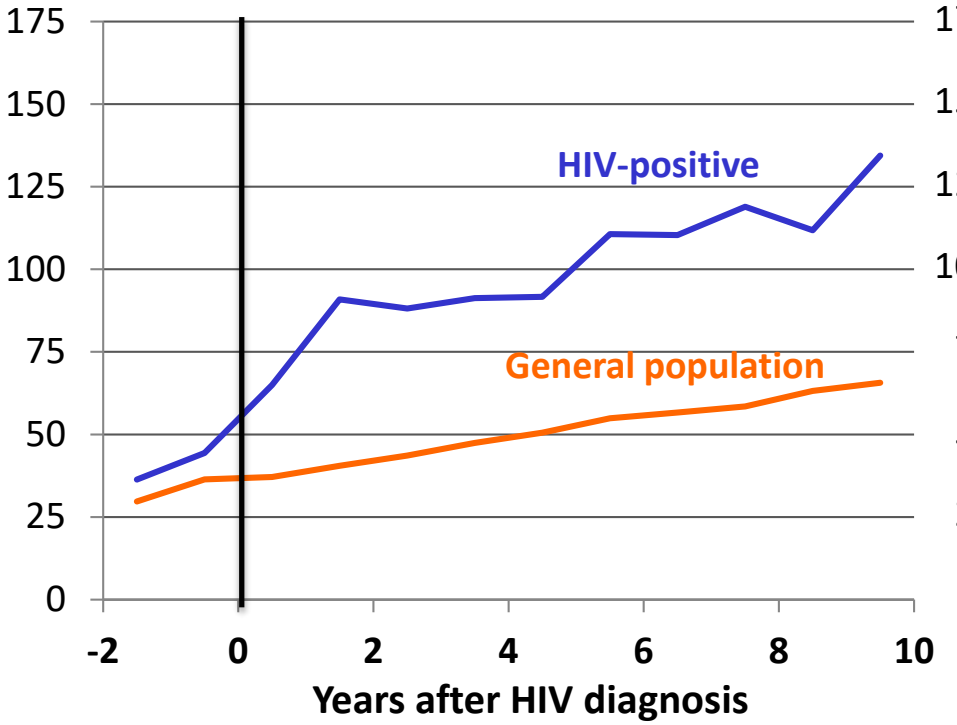
N=4460 HIV-positive

N=40140 age-sex-matched general population comparison cohort

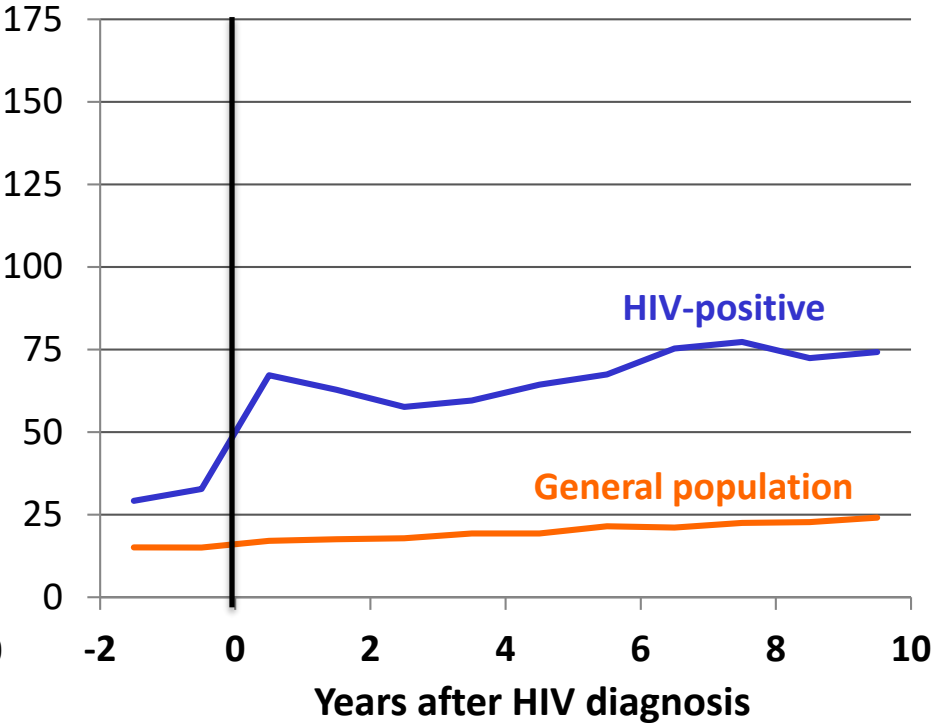
Danish HIV Cohort Study & Danish National Prescription Registry, 1995-2009

Anti-depressants

Utilisation rate: defined daily doses per 1000 person-days



Hypnotics and sedatives



Adapted from Rasmussen et al. HIV Medicine 2014

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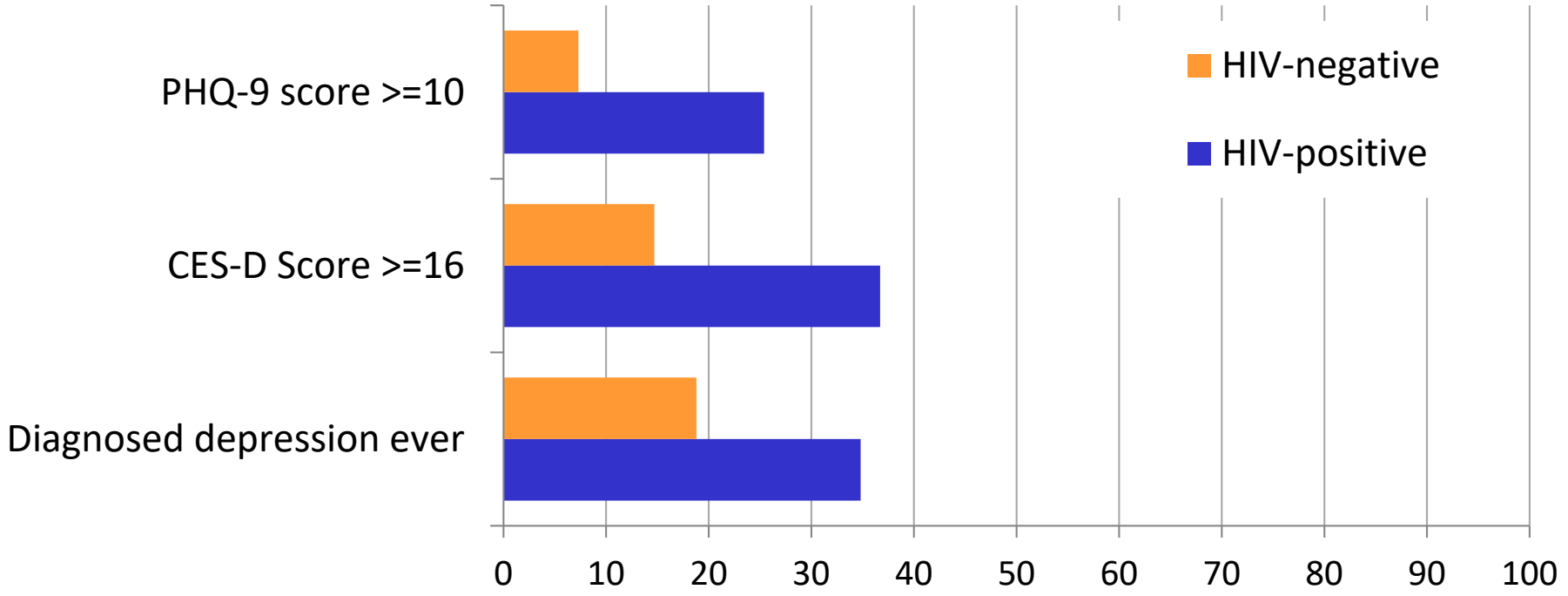
Mental health: HIV-positive vs HIV-negative, UK & Ireland

N=975 HIV-positive
N=288 HIV-negative
***POPPY Study, 2013-14,** aged ≥ 50*

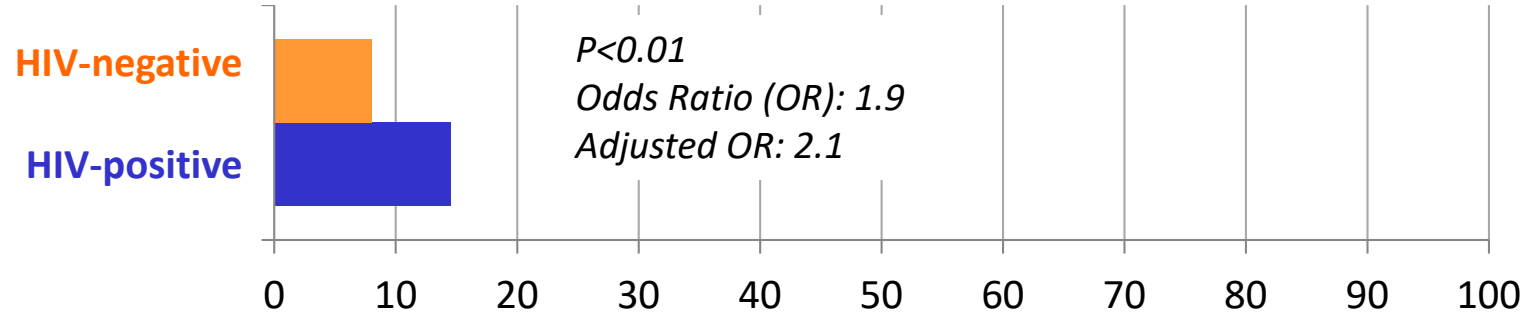


HIV-negative people frequency matched to HIV-positive people for: gender, sexual orientation; ethnicity; location

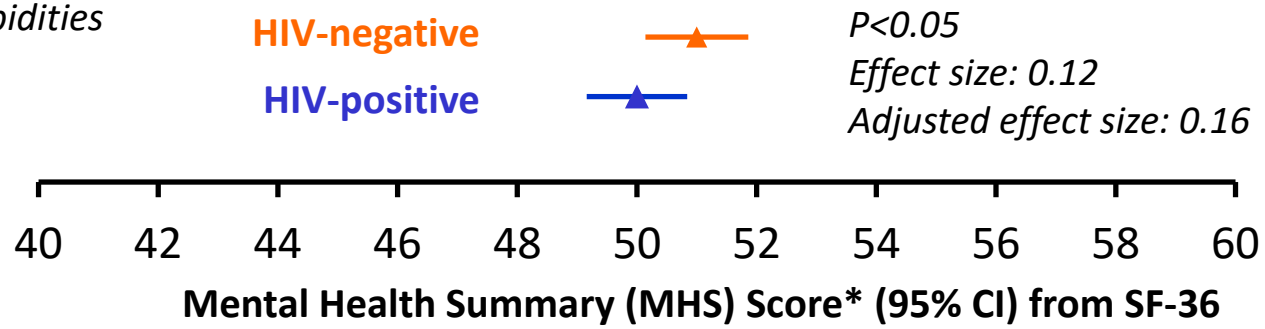
Acknowledgements Caroline Sabin & Davide De Francesco & De Francesco, HIV Med 2019

Mental health: HIV-positive vs HIV-negative, Netherlands

N=541 HIV-positive
N=524 HIV-negative
***AGEhIV Cohort Study, Netherlands 2010-2012,** age ≥45 years*



Adjusted estimates adjusted for age, demographic factors, number of comorbidities

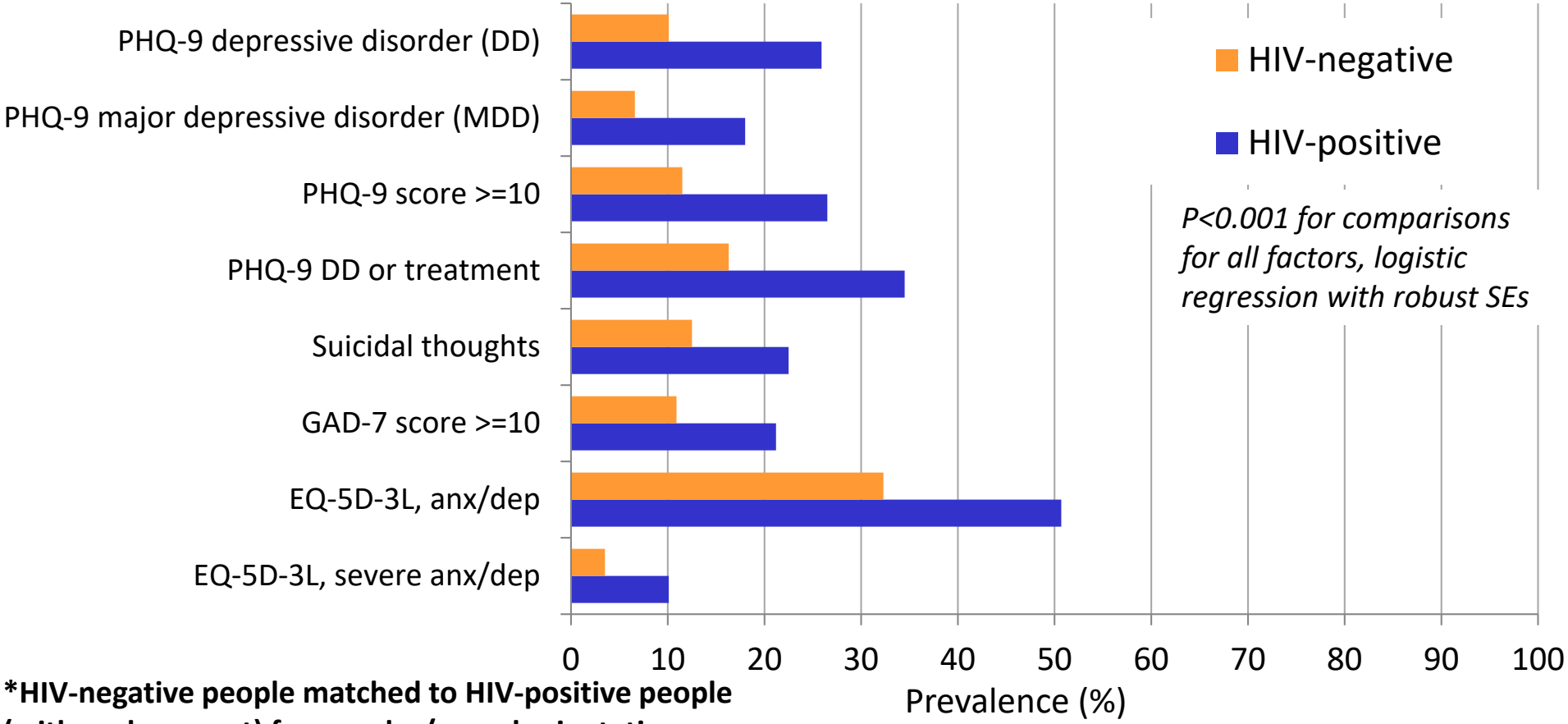


*Higher values denote better quality of life

Adapted from Langebeek et al. AIDS 2017

Mental heath: HIV-positive vs HIV-negative, England

N=2865 HIV-positive
N=2865 HIV-negative / undiagnosed
***ASTRA and AURAH studies, England 2011-12 and 2013-14,** age ≤70 years, matched analysis**



***HIV-negative people matched to HIV-positive people (with replacement) for: gender/sexual orientation; age; ethnicity; education level.**

Lampe et al. AIDS conference 2018

Mental heath: HIV-positive vs HIV-negative, Engl

N=2865 HIV-positi

N=2865 HIV-

ASTRA and AURAH st

Included studies from 1988 to 1998
Frequency of major depression 2-fold higher fro HIV+ve vs HIV-ve

Article

Meta-Analysis of the Relationship Between HIV Infection and Risk for Depressive Disorders

Jeffrey A. Ciesla, M.A.

John E. Roberts, Ph.D.

Objective: Each of 10 published studies investigating the relationship between HIV infection and risk for depressive disorders concluded that HIV-positive individuals are at no greater risk for depression than comparable HIV-negative individuals. This study used meta-analytic techniques to further examine the relationship between depressive disorders and HIV infection.

Method: Meta-analytic techniques were used to aggregate and reanalyze the data from 10 studies that compared HIV-positive and HIV-negative individuals for rates of major depressive disorder (N=2,596) or dysthymic disorder (N=1,822).

Results: The frequency of major depressive disorder was nearly two times higher in HIV-positive subjects than in HIV-negative comparison subjects. On the other hand, findings were inconclusive with regard to dysthymic disorder. Rates of depression do not appear to be related to the sexual orientation or disease stage of infected individuals.

Conclusions: Although the majority of HIV-positive individuals appear to be psychologically resilient, this meta-analysis provides strong evidence that HIV infection is associated with a greater risk for major depressive disorder. Future research should focus on identifying pathways of risk and resilience for depression within this population.

(Am J Psychiatry 2001; 158:725–730)

*HIV-negative people matched
(with replacement) for: gender/
age; ethnicity; education level.

Lampe et al. AIDS conference 2018

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Quality of life – HIV-positive vs other conditions, Germany

N=255 HIV-positive
N=249 with diabetes type 2
N=257 with minor health conditions
Cohort Study '50/2010', 2008-2009, participants aged ≥ 50

Study population	N	Quality of life (SF-36) Mental health mean score*		Prevalence (%) using HADS (score ≥ 8)			
				Depression		Anxiety	
		BL	12M	BL	12M	BL	12M
HIV	255	45.5	45.8	26.2	27.9	34.4	35.0
DM type 2	249	50.0	49.5	22.2	26.1	26.8	32.4
Minor health conditions	257	49.2	48.8	17.6	17.1	30.5	31.4
		p=0.009, adjusted for age		*p=0.12*	*p=0.024*	*p=0.25*	*p=0.75*

*Higher values denote better quality of life

Ronel et al. Psychol Hlth Med 2018

Quality of life – HIV-positive vs other conditions, Netherlands

N=311 HIV-positive (from ATHENA, 2013-14)
N=119 with diabetes type 1 (Cohort study, 2010)
N=2114 with diabetes type 2 (RCT population, 2009-2010)
N=250 with rheumatoid arthritis (RCT population, 2007-2011)

Study population	N	Quality of life (SF-36) mean score*		Adjusted~ odds ratio (95% CI) for poor health score#	
		Physical health	Mental health	Poor physical health	Poor mental health
HIV	331	53.5	50.7	1	1
DM type 1	119	52.3	54.9	0.8 (0.4, 1.3)	0.3 (0.2, 0.6)
DM type 2	2114	50.0	56.4	0.9 (0.7, 1.3)	0.3 (0.2, 0.4)
Rheumatoid arthritis	250	42.0	57.7	3.1 (2.2, 4.5)	0.3 (0.2, 0.5)
				p<0.001	*p<0.001*

*Higher values denote better quality of life

~Adjusted for age, gender, region of origin (Netherlands/other)

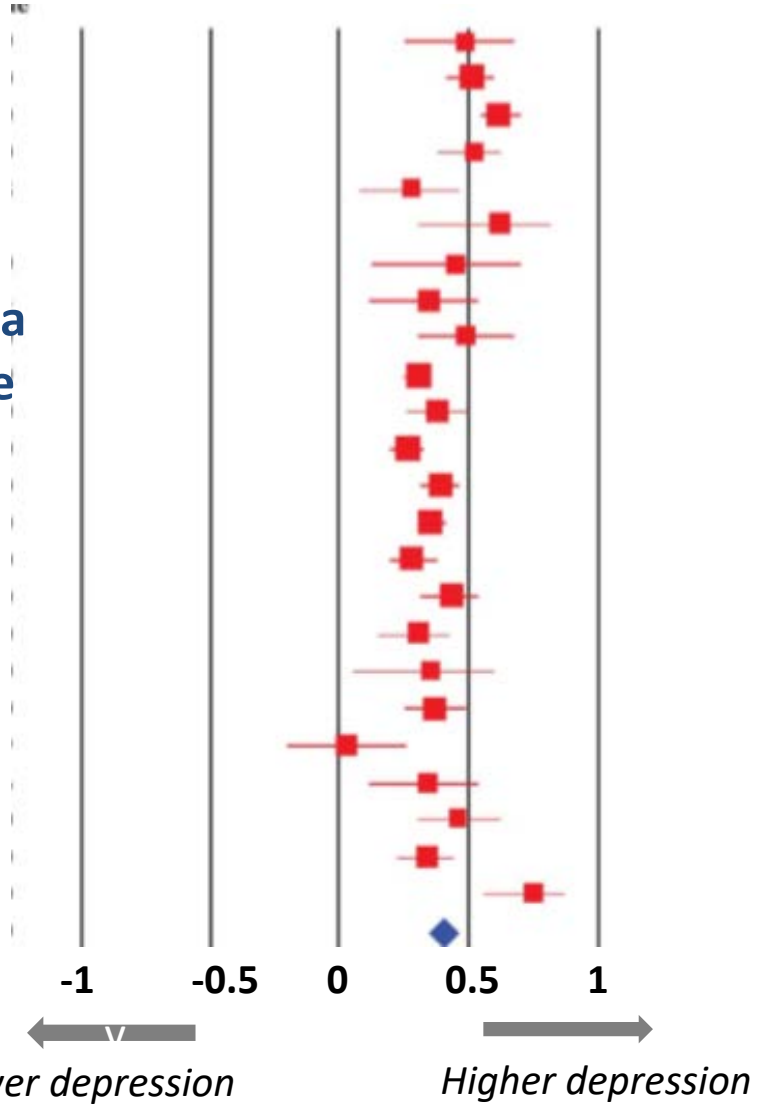
#Poor health = score in first quintile

Engelhard et al. AIDS 2018

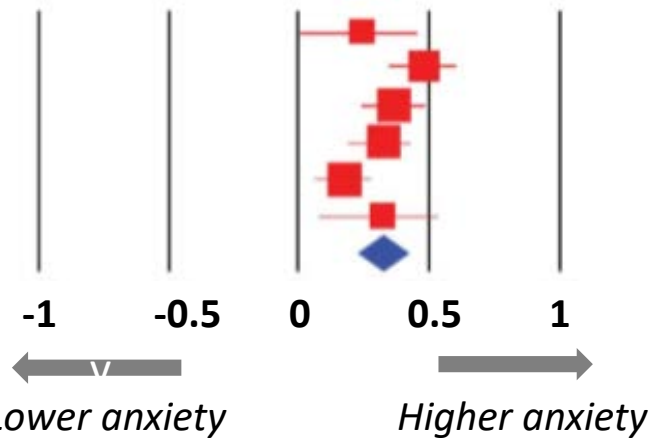
Stigma and mental health, meta-analysis (global)

24 (& 6) studies of HIV-positive people 1996-2013

Correlation between stigma and depressive symptoms



Correlation between stigma and anxiety symptoms



Pooled association was similar for depression, attenuated for anxiety, in the few studies using multivariable analysis

Rueda et al. BMJ Open 2016

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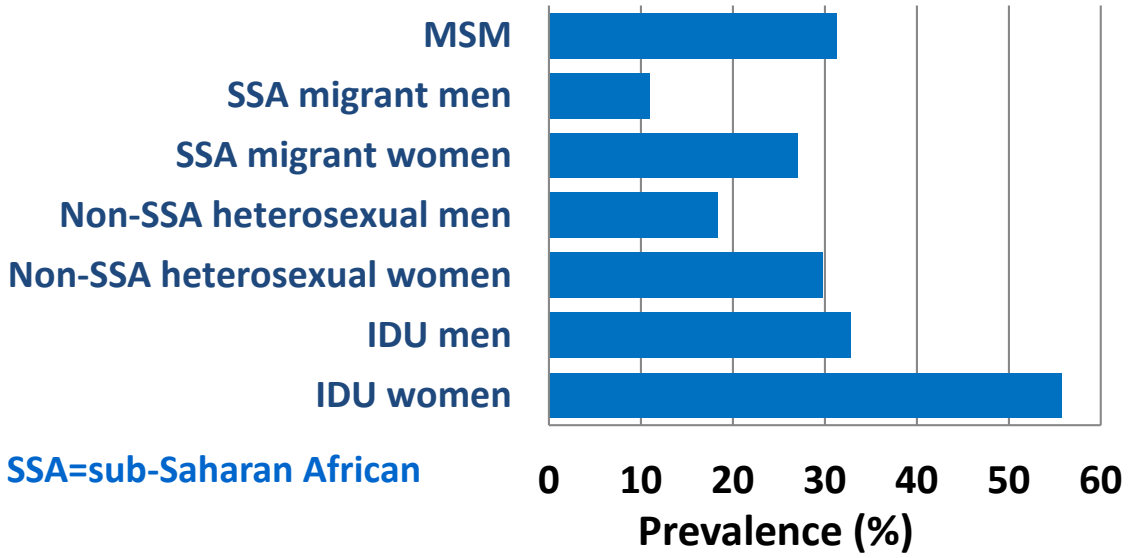
Gender, HIV-transmission-risk group, and depression, Europe

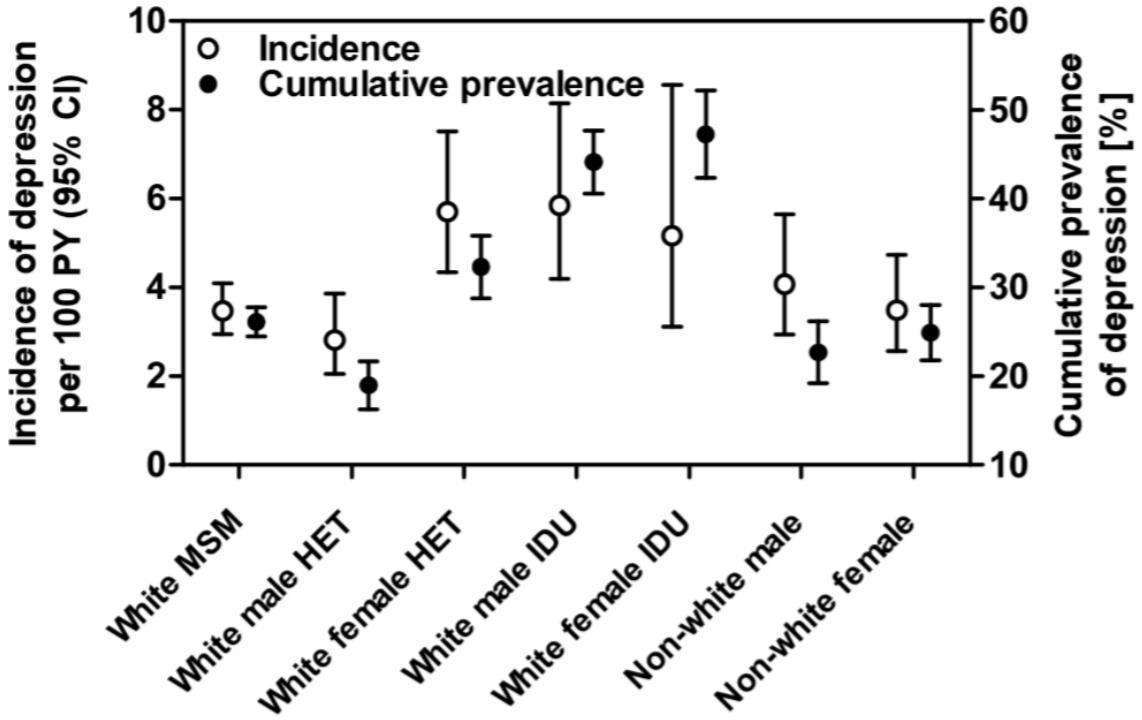
N=2392 ***Vespa2, France 2011***

Depressive symptom episode in past 12 months (CIDI-SF)



N=4422 ***Swiss HIV Cohort Study, 2010-2013***

Incidence and cumulative prevalence of depression diagnosis



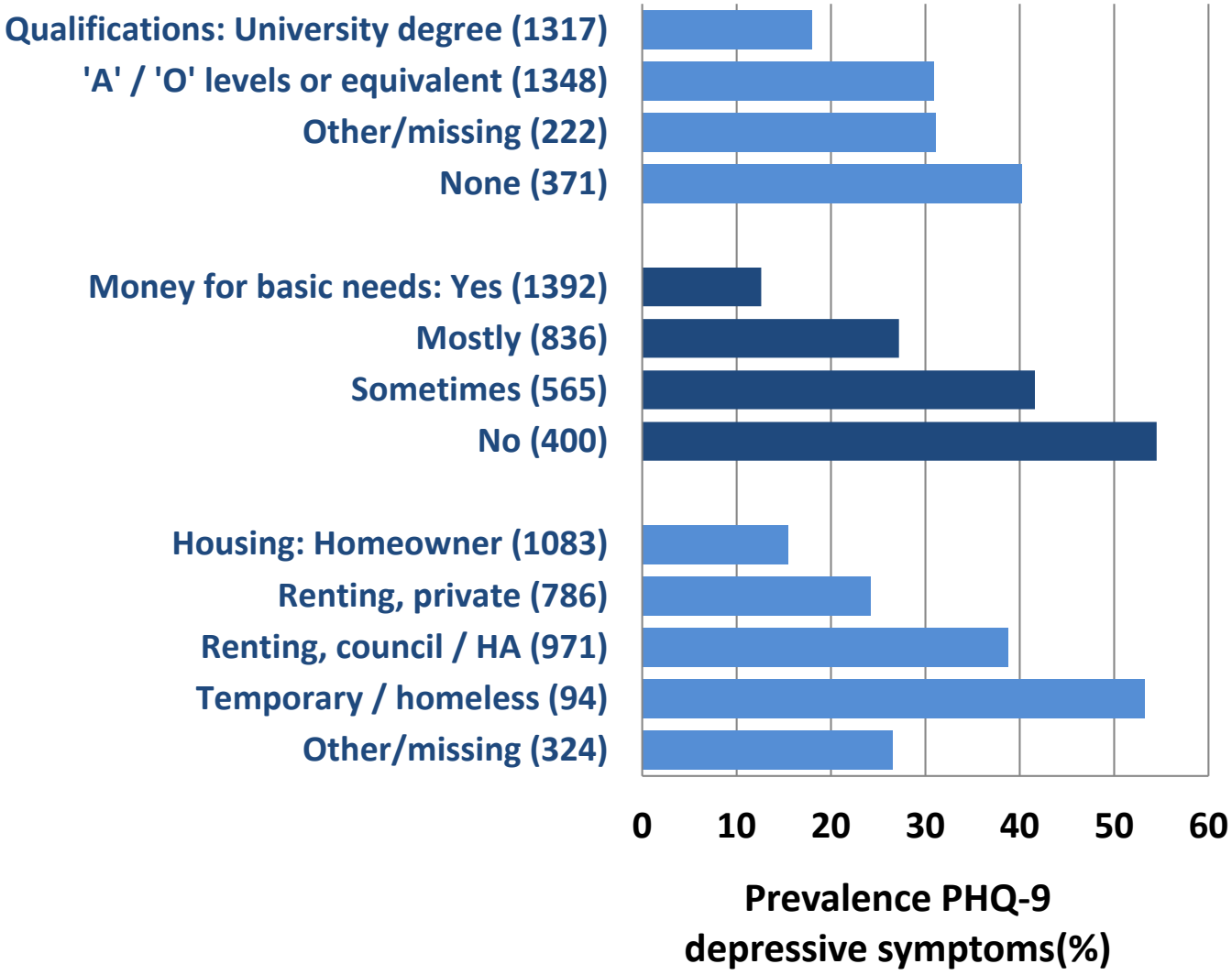
N=226 HIV-positive women who injection drugs,
REDUCE study, Europe 2012-13

- Psychiatric disorder (lifetime prevalence) by DDSI: 87.2%

Feuillet et al. HIV Med 2017; Tirado-Munoz et al. Arch Wom Men Hlth 2018; Anagnostopoulos et al. PLOS One, 2015

Socio-economic factors and mental health, HIV-positive, Europe

N=3258 HIV-positive people
ASTRA Study, England 2011-2012



N=2973 HIV-positive people
Vespa2 Study, France 2011-2012

Housing occupancy status	Prevalence ratio suicide risk~	
	Unadjusted	Adjusted*
Owner/tenant	1	1
Free accommodation	1.7	2.0
Tenant residential care	3.6	2.8
Homeless	4.0	4.9
	p<0.05	*p<0.05*

*From a model including gender/sexual orientation, nationality, HCV, living alone, CD4, psychosocial characteristics

~Having thought about and planned to commit suicide or attempted suicide during past year (6.3%)

Carrieri et al PLoS ONE 2017

Age and mental health, HIV-positive, Europe

N=2392 ***Vespa2 Study, FRANCE 2011***

Age group (years)	N	Prevalence ratio for depressive symptoms past 12m (CIDI-SF)
25-34	281	2.0
35-44	637	1.5
45-54	783	1.5
55-65	459	1
		p<0.001

N=4422 ***Swiss HIV Cohort Study, 2010-2013***

Age group (years)	P-Y	Incidence rate ratio for new depression diagnosis
<45	3818	1.6
45-54	3632	1.4
≥55	1898	1
		p=0.005

N=4119 ***START RCT participants, 2009-2013***

Age group (years)	N	Quality of life (SF-12V2) mean score*	
		Physical health	Mental health
<30	1212	54.4	46.5
30-39	1403	54.3	48.4
40-49	1039	53.1	48.7
≥50	465	50.8	50.2
		p<0.001	*p<0.001*

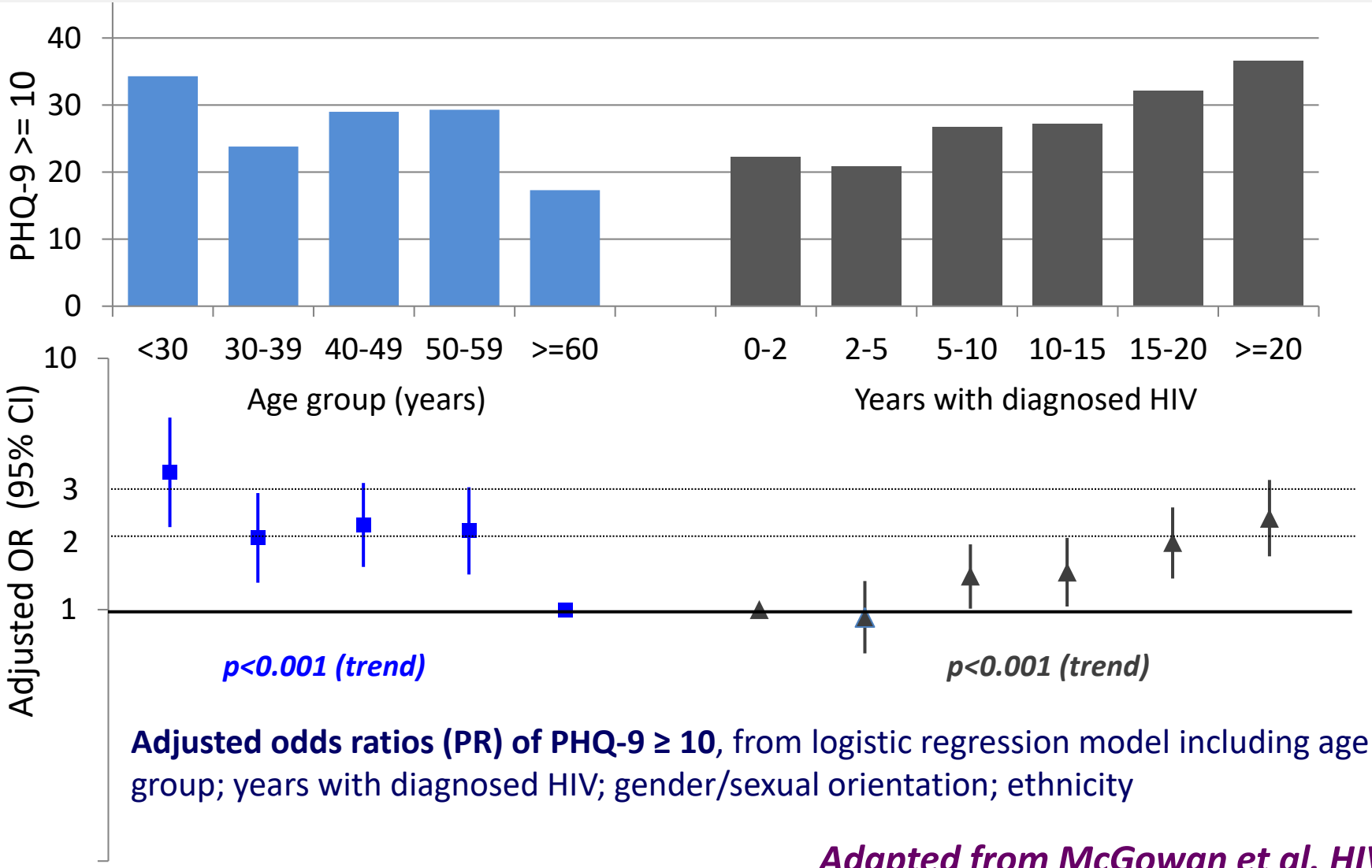
*Higher values denote better quality of life

Anagnostopoulos et al. PLOS One, 2015; Feuillet et al. HIV Medicine 2016; Lifson et al. HIV Medicine 2015

Age, time since HIV diagnosis and depression, England

N=3258 HIV-positive people

ASTRA Study, England 2011-2012



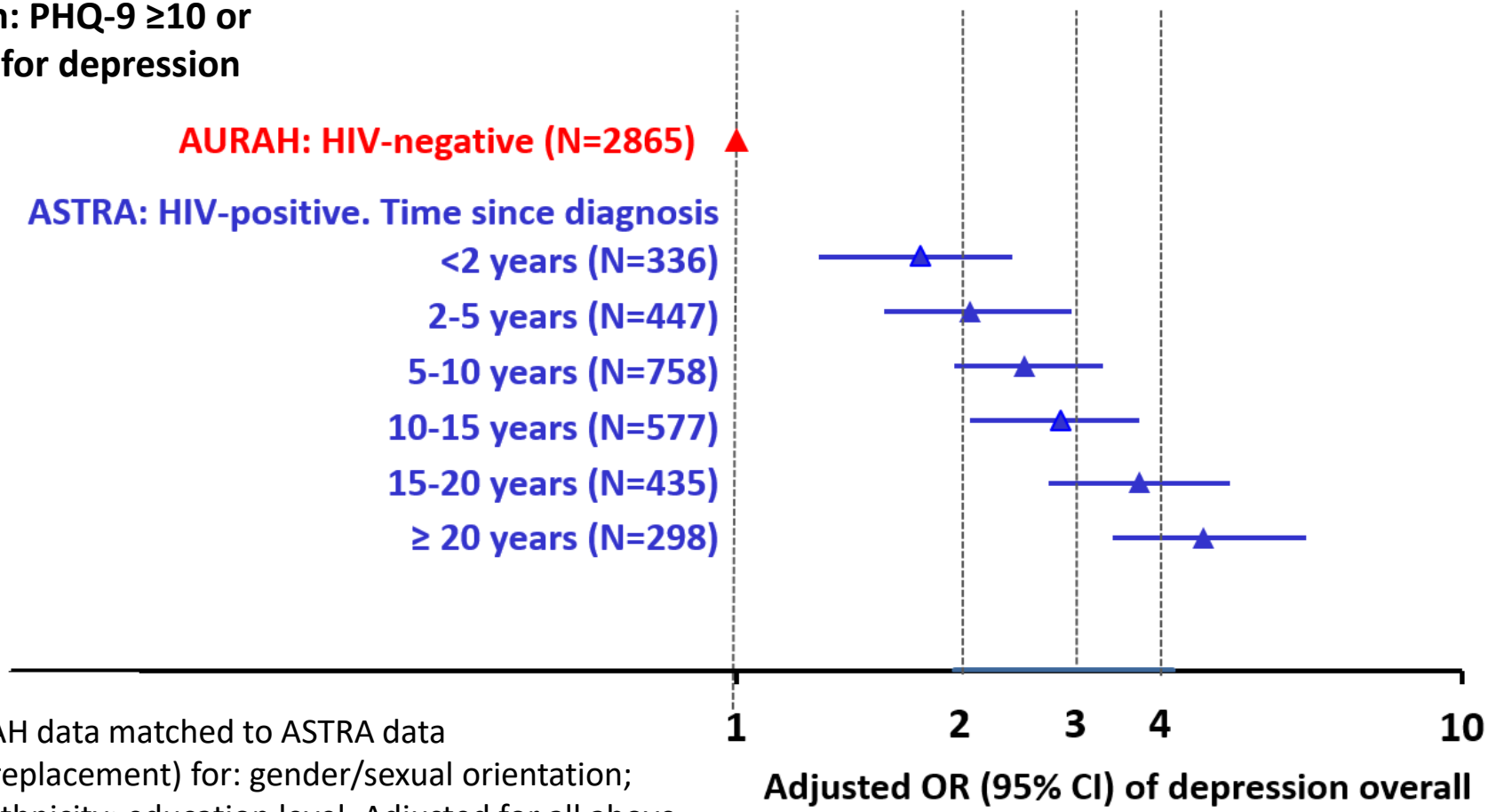
Adjusted odds ratios (PR) of PHQ-9 ≥ 10, from logistic regression model including age group; years with diagnosed HIV; gender/sexual orientation; ethnicity

Adapted from McGowan et al. HIV Medicine, 2017

Depression: HIV-positive vs HIV-negative, England

N=2865 HIV-positive
N=2865 HIV-negative / undiagnosed
***ASTRA and AURAH studies, England 2011-12 and 2013-14,** age ≤70 years, matched analysis**

Depression: PHQ-9 ≥10 or treatment for depression



*AURAH data matched to ASTRA data (with replacement) for: gender/sexual orientation; age; ethnicity; education level. Adjusted for all above factors using logistic regression with robust SEs.

Lampe et al. AIDS conference 2018

Factors linked to depressive symptoms among people with HIV

Demographic:
- Younger age
- Female gender
- Non-white ethnicity (some studies)
- IDU risk group

Socioeconomic:
- Lower education
- Unstable housing
- Unemployment
- Lower income
- Poverty

Psychosocial:
- No stable partner
- Living alone
- Low levels of supportive network
- Stigma
- High levels of HIV status disclosure (some studies)

Health/biological:
- Pain and other physical symptoms
- Cognitive impairment
- HCV co-infection
- Other co-morbidities
- Longer time since HIV diagnosis (some studies)

Lifestyle:
- Smoking (some studies)
- Alcohol problem (some studies)
- Recreational drug use (some studies)
- Sexual activity (no sex & condomless sex vs condom-protected, some studies)

Factors linked to depressive symptoms among people with HIV

Demographic:
Younger age
Female gender
Non-white ethnicity (some studies)
IDU risk group

Socioeconomic:
Lower education
Unstable housing
Unemployment
Lower income
Poverty

Health/biological:
Pain and other physical symptoms
Cognitive impairment
HCV co-infection
Other co-morbidities
Longer time since HIV diagnosis (some studies)

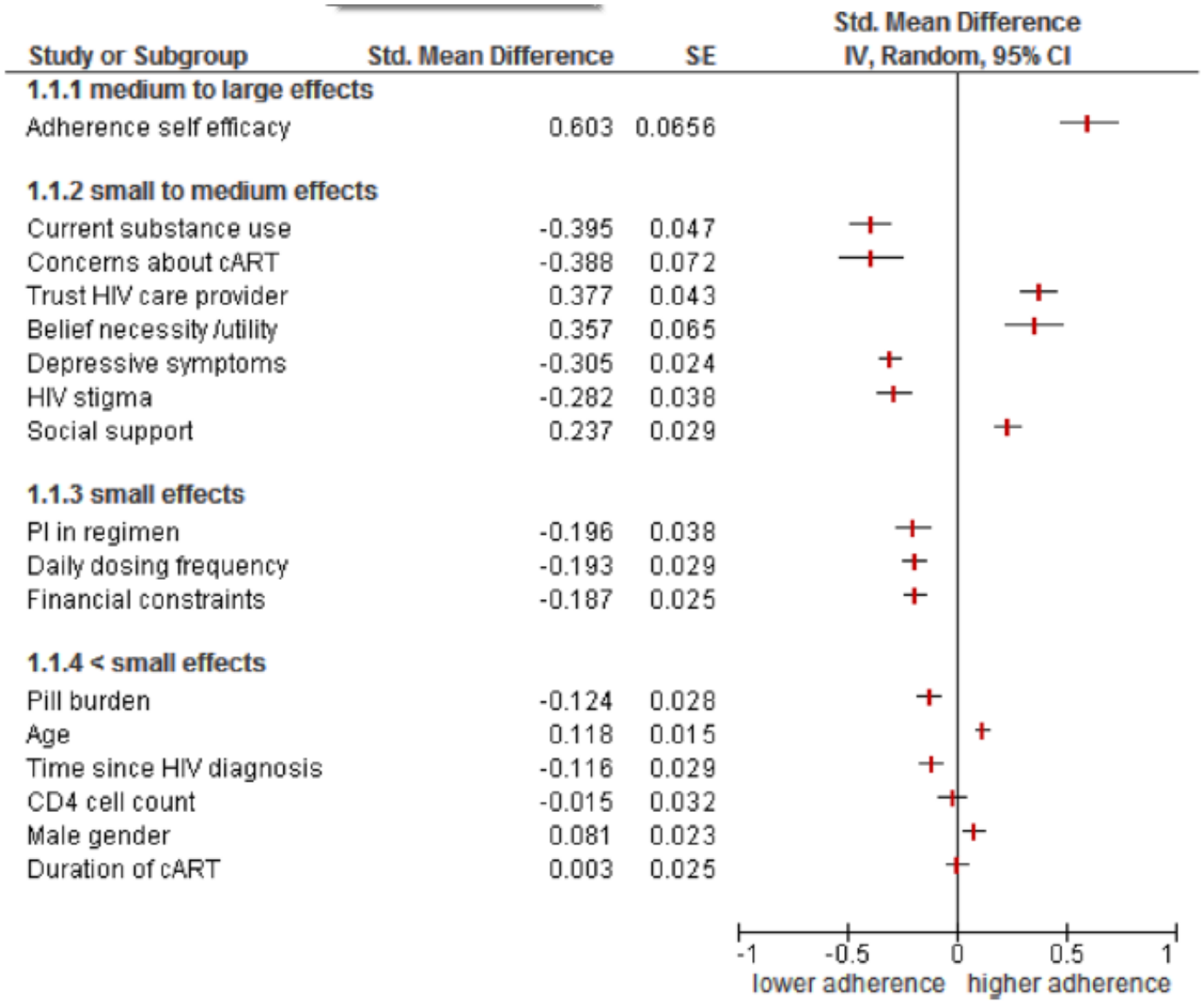
Psychosocial:
No stable partner
Living alone
Low levels of supportive network
Stigma
High levels of HIV status disclosure (some studies)

Lifestyle:
Smoking (some studies)
Alcohol problem (some studies)
Recreational drug use (some studies)
Sexual activity (no sex & condomless sex vs condom-protected, some studies)

HIV OUTCOMES (cART era):
ART non-adherence
Viral load non-suppression

Depression and ART non-adherence, meta-analysis (global)

Based on 207 studies of HIV-positive people 1996-2014



Langebeek, BMC Medicine, 2014

Conclusions

- High prevalence of depression and anxiety among HIV-positive people in Europe in recent period, across countries and methods of assessment
- HIV-positive people substantially more likely to be experiencing mental health problems than comparable HIV-negative people - the difference is greatest for those diagnosed with HIV for longest
- Evidence that mental health may be poorer among people living with HIV than those living with other long-term physical health conditions
- Continued emphasis on detection and management of mental health conditions among those living with HIV is crucial, with links to appropriate support
- Highlights need for standardised collection of data on psychological symptoms and diagnoses for research studies and clinical care

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