Dr Fiona Lampe

University College London

Depression and virological status among UK HIV outpatients: a multicentre study

Lampe F, Speakman A, Phillips A, Sherr L, Gilson R, Johnson M, Fisher M, Anderson J, Wilkins E, Broussard C, McDonnell J, Perry N, Scourse R, George V, Hart G, Johnson A, Collins S, Miners A, Elford J, Geretti A, Burman B, Rodger A, for the ASTRA Study.

Background

- Mental health has been highlighted as a current priority area nationally, and in HIV care
- Prevalence of depression is raised among people with chronic health conditions, including HIV
- Mental health problems may also be a risk factor for acquisition of HIV
- Depression and other psychological symptoms have been linked to ART non-adherence and poorer clinical and virological outcomes among HIV-diagnosed individuals
- Few large studies of mental health issues among people with HIV in the UK

Objectives

- Assess prevalence of current depressive symptoms among HIV-diagnosed individuals in the UK
- Evaluate cross-sectional associations of depressive symptoms with demographic, socio-economic and HIV-related factors, and with viral suppression on ART
- Assess levels of current treatment for depression in relation to depressive symptoms

Methods

- ASTRA (Antiretrovirals, Sexual Transmission Risk and Attitudes): questionnaire study of >3000 HIV-outpatients attending UK centres (Royal Free; Mortimer Market; Homerton; North Manchester; Brighton; Eastbourne) in 2011/12
- Self-completed questionnaire (in clinic or returned by post) included information on demographic factors; socio-economic factors; HIV history; ART non-adherence; depression symptoms and treatment
- Latest viral load (VL) and CD4 count at questionnaire completion recorded from clinic databases for all participants

Depressive symptoms: PHQ-9

PHQ-9 questions	Frequency in past 2 weeks (score)
1) Little interest or pleasure in doing things	Not at all (0) Several days (1) More than half the days (2) Nearly every day (3)
2) Feeling down, depressed or hopeless	
3) Trouble falling or staying asleep, or sleeping too much	
4) Feeling tired or having little energy	
5) Poor appetite or overeating	
6) Feeling bad about yourself – or that you are a failure or have let yourself or your family down	
7) Trouble concentrating on things, such as reading the newspaper or watching television	
8) Moving or speaking so slowly that other people could have noticed. Or the opposite - being so fidgety or restless that it is hard to sit still	
9) Thoughts that you would be better off dead, or of hurting yourself in some way	

PHQ-9 Depressive Symptoms:

(i) Depressive Disorder (DD)
[includes 'major' and 'other' DD]

(ii) Major Depressive Disorder (MDD)

(iii) Depression Severity Score (DSS)

Sum of responses (range: 0 to 27)
None (0)
Minimal (1-4)
Mild (5-9)
Moderate (10-20)
Severe (≥20)

Participants

- Present analysis includes first 2175 participants recruited from February to November 2010 (62% response rate of all invited)

N=2175 subjects		N	%
Gender/Sexuality	MSM Heterosexual men Women	1594 220 357	73.4 % 10.1 % 16.4 %
Ethnicity	White Black African Other ethnicity	1539 330 306	70.8 % 15.2 % 14.1 %
On ART	Yes No	1835 301	85.9 % 14.1 %
Age (years)	Mean (SD); range		44.4 (9.4); 18 – 80

Prevalence of depressive symptoms

N=2175	n	Prevalence (95% CI)	Prevalence comparison
PHQ-9: DD (Depressive disorder)	579	26.6 % (24.8 %, 28.5 %)	General population (Germany)[1]: 9%
PHQ-9: MDD (Major depressive disorder)	415	19.1 % (17.4 %, 20.7 %)	General population (Germany)[1]: 4% Primary care (Netherlands)[2]: 5%
	n	%	
PHQ-9: DSS (Depression severity score)			General population (England)[3]: PHQ-9 DSS score ≥ 10: 7% Primary care (Netherlands)[2]: PHQ-9 DSS score ≥ 10: 11%
None (0)	411	18.9 %	
Minimal (1-4)	729	33.5 %	
Mild (5-9)	448	20.6 %	
Moderate (10-19)	444	20.4 %	
Severe (≥ 20)	143	6.6 %	
DSS score ≥ 10	587	27.0%	

[1]Martin et al. General Hospital Psychiatry 2006; 28: 71
[2]Zuithoff et al. BMC Family Practice 2010; 11: 98
[3]Paranjothy et al. BMC Public Health 2011; 11: 145

Depressive symptoms by demographic factors

		N	% with PHQ-9 DD	P-value (Chi-squared)
Gender/Sexuality [N=2171]	MSM	1594	25.7 %	p=0.36
	Heterosexual men	220	29.1 %	
	Women	357	28.6 %	
Ethnicity [N=2175]	White	1539	25.9 %	p=0.52
	Black African	330	28.5 %	
	Other ethnicity	306	28.1 %	
Born in UK [N=2103]	Yes	1204	25.8 %	P=0.31
	No	899	27.8 %	
Age group (years) [N=2033]	<30	111	32.4 %	p=0.028
	30-39	487	23.2 %	
	40-49	888	28.2 %	
	50-59	432	26.6 %	
	≥60	115	17.4 %	

Depressive symptoms by socio-economic factors

		N	% with PHQ-9 DD	P-value (Chi-squared)
Employment [N=2102]	Employed	1225	15.3 %	p<0.001
	Unemployed	378	43.4 %	
	Sick / disabled	282	52.8 %	
	Other	217	23.5 %	
Education [N=2094]	University	904	18.8 %	p<0.001
	Other	1190	31.7 %	
'Money to cover basic needs?' [N=2136]	Yes, always	974	13.3 %	p<0.001 (test for trend)
	Yes, mostly	549	27.3 %	
	Yes, sometimes	366	43.2 %	
	No	247	53.0 %	
Social support group* (measure of supportive relationships) [N=2140]	1: High social support	675	8.9 %	p<0.001 (test for trend)
	2	563	16.2 %	
	3	414	32.1 %	
	4	264	52.3 %	
	5: Low social support	224	66.1 %	

*Assessed by modified version of Duke-UNC Functional Social Support questionnaire

Depressive symptoms by HIV-related factors

		N	% with PHQ-9 DD	P-value (Chi-squared)
Years since HIV diagnosis [N=2128]	≤2	257	19.8 %	p<0.001 (test for trend)
	2-10	909	24.1 %	
	10-20	739	29.6 %	
	>20	223	34.5 %	
CD4 count (/mm^3) [N=2153]	<200	102	33.3 %	p=0.84 (test for trend)
	200-349	279	24.0 %	
	350-499	526	26.0 %	
	≥500	1246	26.8 %	
ART status [N=2135]	On ART	1835	26.5 %	p=0.90
	Stopped ART	51	27.5 %	
	Never taken ART	249	25.3 %	

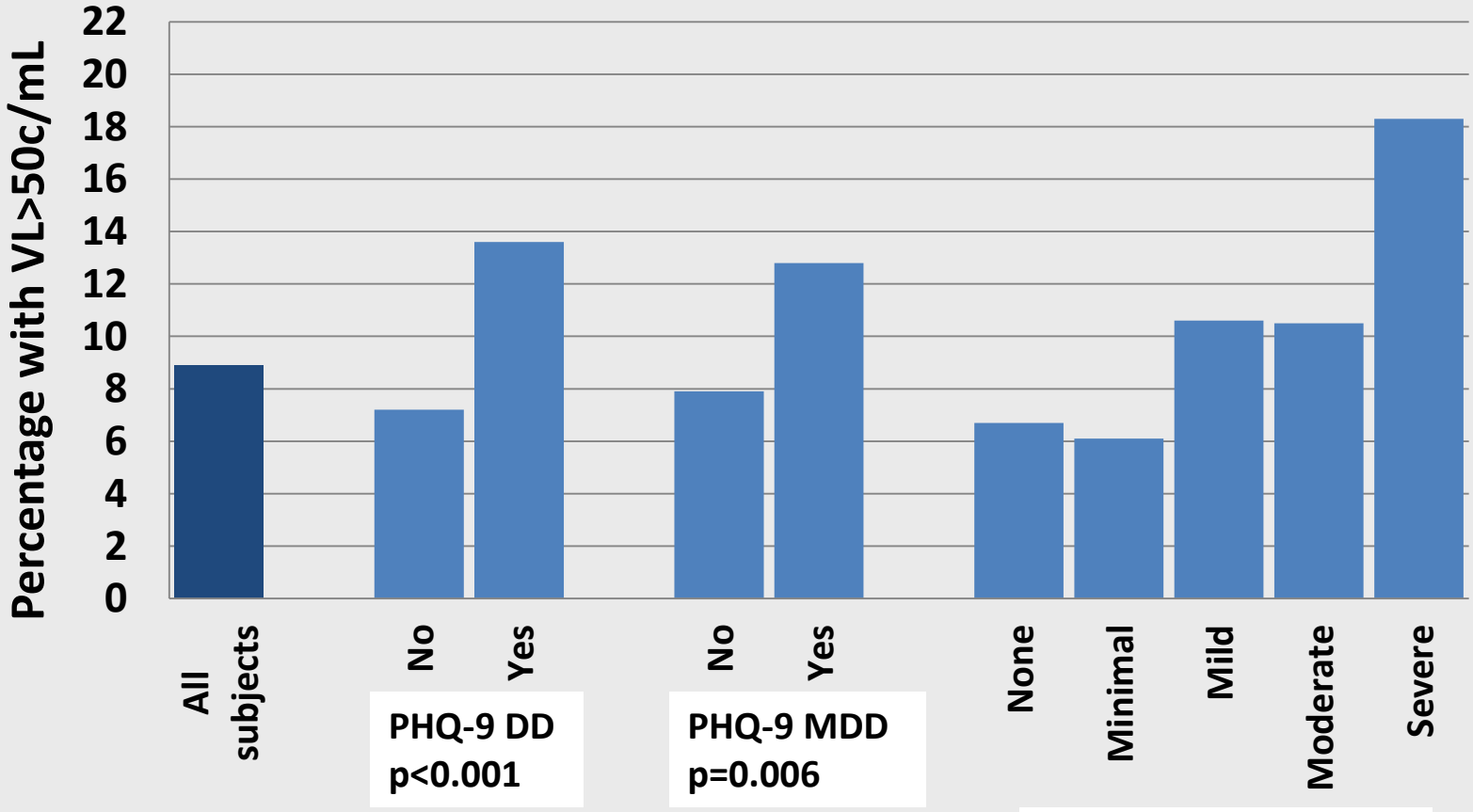
- Age group; employment status; education; financial hardship; social support; years since diagnosis were independently associated with PHQ-9 depressive disorder (p<0.01 for all factors, multivariable logistic model, additionally adjusted for clinic)

Depressive symptoms and ART non-adherence

Participants on ART only		N	% with PHQ-9 DD	P-value (Chi-squared)
Non-adherence to ART [N=1820, on ART]	Missed no ART past 2 weeks	1363	24.1 %	p<0.001 (test for trend)
	Missed 1 dose	255	29.0 %	
	Missed 2 doses	99	34.3 %	
	Missed ≥3 doses	103	41.7 %	

Viral load non-suppression on ART by depressive symptom status

N=1618 participants who started ART ≥ 6 months ago; n=144 with VL>50 c/mL



VL=latest VL at questionnaire completion
P values by Chi-squared tests

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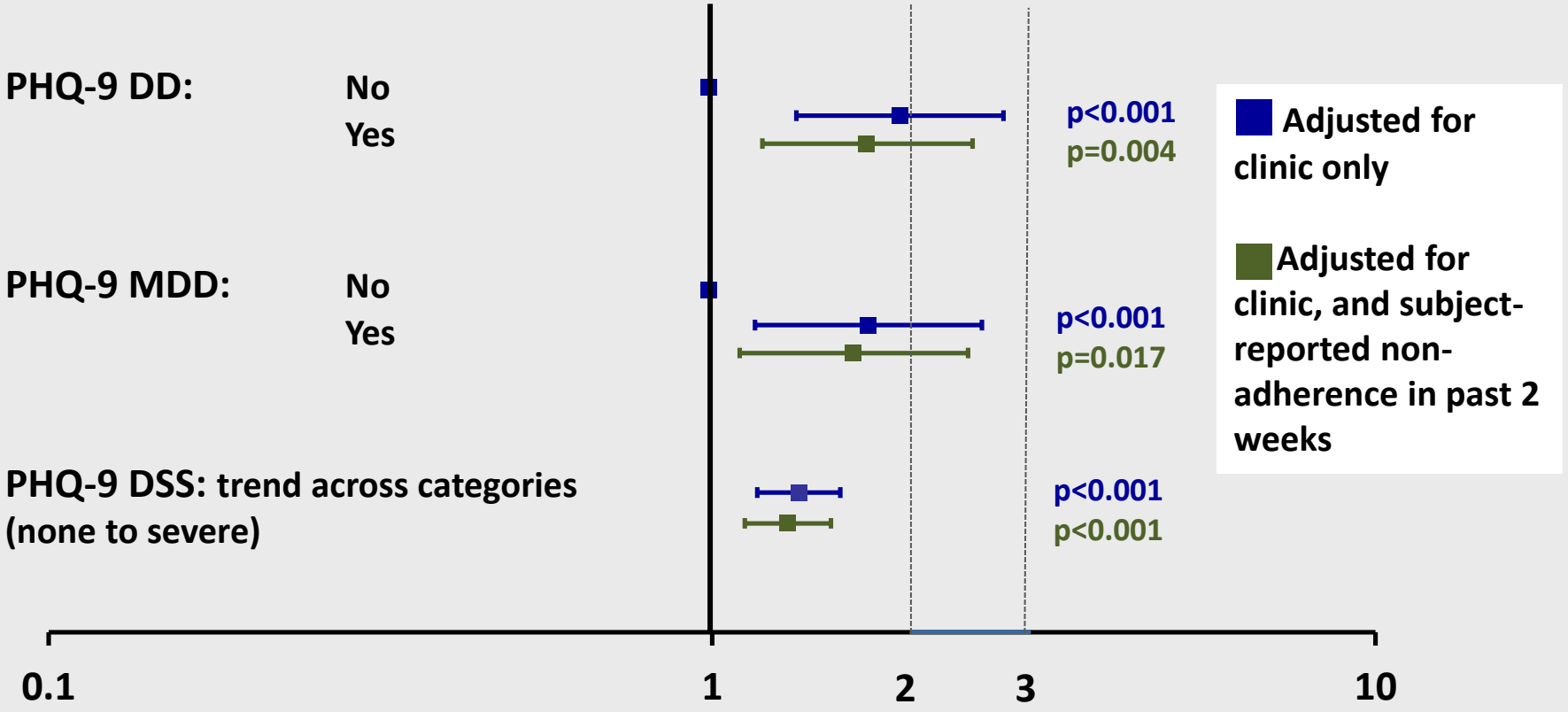

Adjusted odds ratios by logistic regression

Depressive symptoms and current treatment for depression

PHQ-9 Depressive Disorder status	Current treatment for depression?*	N	% of total participants
PHQ-9 DD (N=579)	YES NO	241 338	11.1 % 15.5 %
No PHQ-9 DD (N=1596)	YES NO	200 1396	9.2 % 64.2 %
TOTAL		2175	100 %

*Medicine or other therapy for depression

- Total prevalence of depression (treatment or symptoms): 35.8% (779/2175)
- Of all participants with evidence of depression, 43.4% (338/779) were not receiving any treatment for depression

Conclusions

- Depressive symptoms are prevalent among individuals with diagnosed HIV in the UK, and are strongly linked to adverse socio-economic circumstances, and longer time since HIV diagnosis
- Depressive symptoms are associated with non-suppression of VL on ART, even after accounting for recent self-reported non-adherence, suggesting depression measures may provide important additional information on adherence patterns
- Depression may be under-recognised or undertreated among HIV outpatients
- Results support the need for identification and management of depression in HIV clinical care

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ASTRA clinic teams

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