Lampe, F; Speakman, A; Sherr, L; Phillips, A; Collins, S; Gilson, R; Johnson, M; Fisher, M; Wilkins, E; Anderson, J; +14 more... Daskalopoulou, M; Edwards, S; McDonnell, J; Perry, N; Jones, M; O’Connell, R; Lascar, M; Hart, G; Johnson, A; Miners, A; Geretti, A; Burman, W; Elford, J; Rodger, A; (2013) Psychological and physical symptoms and sexual behaviour among HIV-diagnosed men who have sex with men (MSM) in the UK. [Conference or Workshop Item] http://researchonline.lshtm.ac.uk/id/eprint/856580

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Dr Fiona Lampe

University College London
Psychological and physical symptoms and sexual behaviour among HIV-diagnosed MSM in the UK

Background

• High burden of psychological and physical symptoms among people living with HIV

• Symptoms may impact on quality of life, HIV treatment success, and lifestyle factors such as sexual behaviour

• Reduced sexual interest and activity may be one feature of depression and anxiety

• Some evidence that psychological symptoms are associated with increased levels of sexual risk behaviour among HIV-diagnosed men who have sex with men (MSM)

• Assessing the link between symptoms and sexual behaviour among HIV-diagnosed MSM is important for HIV prevention and for understanding sexual health needs of this group
Objective

• Assess relationship between self-reported psychological and physical symptoms and patterns of recent sexual behaviour among HIV-diagnosed MSM in the UK
Methods (1)

• ASTRA (Antiretrovirals, Sexual Transmission Risk and Attitudes): questionnaire study of HIV-outpatients attending 8 UK centres (Royal Free; Mortimer Market; Homerton; Newham; Whipps Cross; North Manchester; Brighton; Eastbourne) in 2011/12

• N=3258 participants (64% response rate): 2246 MSM; 1012 heterosexual men and women

• Self-completed, confidential questionnaire (completed in clinic or returned by post) included range of demographic, socio-economic, lifestyle, HIV and health-related factors
Methods (2)

• Psychological and physical symptoms in past 2 weeks:
  - Depression score (PHQ-9 DS)
  - Anxiety score (GAD-7 AS)
  - Physical symptom distress score (PSS, using modified MSAS-SF*)

• Recent sexual activity category (based on anal or vaginal sex in past 3 months):
  1) Not sexually active
  2) Condom-protected sex or HIV-positive partner(s) only
  3) Condom-less sex with discordant (HIV-negative/unknown) status partner(s) (CLS-D)

• 2172 (97%) MSM included in analysis who had useable information on recent sexual activity

• Mean (SD) age: 45.0 (9.6) yrs; 89% white ethnicity; 85% on ART

*Memorial Symptom Assessment Scale (Short Form)
## Psychological and physical symptoms

<table>
<thead>
<tr>
<th>Classification (score)</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score ≥10 (depression)</td>
<td>586 (27.0)</td>
</tr>
</tbody>
</table>

### PHQ-9 depression score (PHQ-9 DS)

- Minimal (0-4)
- Mild (5-9)
- Moderate (10-19)
- Severe (20-27)

<table>
<thead>
<tr>
<th>N=2172 MSM</th>
<th>Minimal (0-4)</th>
<th>Mild (5-9)</th>
<th>Moderate (10-19)</th>
<th>Severe (20-27)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%</td>
<td>1122 (51.7)</td>
<td>464 (21.4)</td>
<td>457 (21.0)</td>
<td>129 (5.9)</td>
<td></td>
</tr>
</tbody>
</table>

### GAD-7 anxiety score (GAD-7 AS)

- Minimal (0-4)
- Mild (5-9)
- Moderate (10-14)
- Severe (15-21)

<table>
<thead>
<tr>
<th>N=2172 MSM</th>
<th>Minimal (0-4)</th>
<th>Mild (5-9)</th>
<th>Moderate (10-14)</th>
<th>Severe (15-21)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%</td>
<td>1225 (56.4)</td>
<td>497 (22.9)</td>
<td>249 (11.5)</td>
<td>201 (9.3)</td>
<td></td>
</tr>
</tbody>
</table>

### Physical symptom distress score (PSS)

- Minimal (0-1)
- Low (2-5)
- Moderate (6-11)
- High (12-30)

<table>
<thead>
<tr>
<th>N=2172 MSM</th>
<th>Minimal (0-1)</th>
<th>Low (2-5)</th>
<th>Moderate (6-11)</th>
<th>High (12-30)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N (%</td>
<td>936 (43.1)</td>
<td>582 (26.8)</td>
<td>393 (18.1)</td>
<td>261 (12.0)</td>
<td></td>
</tr>
</tbody>
</table>

### Physical symptoms:

1) pain 2) headache 3) numbness/tingling in hands or feet 4) muscle or joint aches 5) diarrhoea 6) feeling bloated 7) sweats or fever 8) breathlessness 9) skin problems (e.g. itching or rash) 10) changes in fat in face or body
Associations between psychological and physical symptoms

% with physical symptom distress (PSS) ≥ 6

N=2172 MSM

Spearmans correlation coefficients:
- PHQ-9 DS versus PSS  r=0.66
- GAD-7 AS versus PSS  r=0.59
- PHQ-9 DS versus GAD-7 AS  r=0.83
# Recent sexual activity category

<table>
<thead>
<tr>
<th>N=2172 MSM</th>
<th>Sexual activity (anal or vaginal sex) in past 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not sexually active</td>
</tr>
<tr>
<td>N (%)</td>
<td>797 (36.7%)</td>
</tr>
<tr>
<td>Mean (SD) age</td>
<td>48.0 (9.1)</td>
</tr>
<tr>
<td>Median (IQR) years since HIV diagnosis</td>
<td>11.7 (6.5, 18.0)</td>
</tr>
<tr>
<td>% on ART</td>
<td>91%</td>
</tr>
<tr>
<td>% HIV +ve stable partner</td>
<td>16%</td>
</tr>
<tr>
<td>% HIV –ve stable partner</td>
<td>31%</td>
</tr>
<tr>
<td>% no stable partner</td>
<td>54%</td>
</tr>
<tr>
<td>% university education</td>
<td>40%</td>
</tr>
<tr>
<td>% white ethnicity</td>
<td>91%</td>
</tr>
</tbody>
</table>
Sexual lifestyle / attitude factors by recent sexual activity category

Not sexually active N=797  Condom or HIV+ve partner(s) N=1030  CLS-D N=345

- > 20 new sexual partners in past year
- Used internet to look for partner past 3m
- Had group sex past 3m
- Recent STI diagnosed (other than HIV)
- Worried infected someone recently*
- Less likely use condom with casual partner*
- Difficult to discuss condom with new partner*
- Expect to tell new partner I'm HIV-positive*

P<0.001 for all factors
Chi-squared test, global p value, comparing sexual activity categories

*% who agree with statement. N=2172 MSM
Other factors by recent sexual activity category

![Graph showing percentages of different factors across sexual activity categories.]

- **Not sexually active N=797**
- **Condom or HIV+ve partner(s) N=1030**
- **CLS-D N=345**

- **Heavy alcohol consumption**
- **Recreational drug use in past 3 m**
- **Problems with sexual interest or activity**
- **Problems with sex are causing distress**
- **Low social support**

*Using modified Duke UNC Functional Social Support questionnaire

*Defined on basis of frequency and amount for usual intake

N=2172 MSM

**P<0.01 for all factors**

*Chi-squared test, global p value, comparing sexual activity categories*
Psychological and physical symptom prevalence by recent sexual activity category

- **Not sexually active**
- **Condom-protected sex or HIV+ve partner(s)**
- **CLS-D**

### Emotional Distress

- **Depression:**
  - PHQ-9 DS ≥ 10
  - *p* < 0.001*

- **Anxiety:**
  - GAD-7 ≥ 10
  - *p* = 0.001*

- **Physical symptom distress:**
  - PSS ≥ 6
  - *p* < 0.001*

*N* = 2172 MSM

*Global p value comparing symptom prevalence across sexual activity categories, Chi-squared test*
## Associations of symptoms with recent sexual activity category

<table>
<thead>
<tr>
<th>N=2172 MSM</th>
<th>Sexual activity in past 3 months</th>
<th></th>
<th></th>
<th></th>
<th>p value$\dagger$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom measure</td>
<td>Not sexually active</td>
<td>Condom-protected sex, or HIV +ve partner(s)#</td>
<td>Condom-less sex with HIV -ve or unknown status partner(s) (CLS-D)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=797</td>
<td>N=1030</td>
<td>N=345</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHQ-9 DS ≥10: Unadjusted OR*(95%CI)</td>
<td>1.6 (1.3, 2.0)</td>
<td>1</td>
<td>1.4 (1.1, 1.9)</td>
<td>p&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>GAD-7 AS ≥10: Unadjusted OR*(95%CI)</td>
<td>1.5 (1.2, 1.9)</td>
<td>1</td>
<td>1.5 (1.1, 2.0)</td>
<td>p=0.001</td>
<td></td>
</tr>
<tr>
<td>PSS ≥6: Unadjusted OR*(95%CI)</td>
<td>2.0 (1.6, 2.4)</td>
<td>1</td>
<td>1.5 (1.2, 2.0)</td>
<td>p&lt;0.001</td>
<td></td>
</tr>
</tbody>
</table>

Separate multinomial logistic models fitted for each symptom measure. #Reference category. *OR=odds ratio. §Global p value
## Associations of symptoms with recent sexual activity category

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<th>p value$</th>
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<tr>
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<td>1.4 (1.1, 1.8)</td>
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<td>1</td>
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Separate multinomial logistic models fitted for each symptom measure. #Reference category.
*OR=odds ratio. Each adjusted model includes: age; time since HIV diagnosis; stable partner status; university education; ART status; ethnicity. Adjusted models include 2129 MSM. $Global p value
Symptoms and condom-less sex with HIV-discordant-status partner(s) (CLS-D) among 1375 sexually active MSM

- Depression
  - PHQ-9 DS, p=0.002*

- Anxiety
  - GAD-7 AS, p<0.001*

- Physical symptom distress
  - PSS, p<0.001*

*P values by Chi-squared tests for trend
Conclusions

• Depression, anxiety, and physical symptoms are common among HIV-diagnosed MSM in the UK, and closely associated

• Symptoms have a complex relationship with sexual behaviour, being linked both with lack of sexual activity and, among sexually-active MSM, with condom-less sex with HIV-discordant status partner(s)

• HIV-diagnosed MSM having ‘low risk’ sex have the lowest prevalence of psychological and physical symptoms

• Causal sequence in associations between symptoms and patterns of sexual behaviour may also be complex, and may operate in both directions

• Detection and management of symptoms among HIV-diagnosed MSM deserves high priority, and may be one component of HIV prevention strategies
Acknowledgments

Thank you to all ASTRA study participants

**ASTRA clinic teams**

**Royal Free Hospital:** Alison Rodger; Margaret Johnson; Jeff McDonnell; Adebiyi Aderonke

**Mortimer Market Centre:** Richard Gilson; Simon Edwards; Lewis Haddow; Simon Gilson; Christina Broussard; Robert Pralat

**Brighton and Sussex University Hospital:** Martin Fisher; Nicky Perry; Alex Pollard; Serge Fedele; Louise Kerr; Lisa Heald; Wendy Hadley; Kerry Hobbs; Julia Williams; Elaney Youssef; Celia Richardson; Sean Groth

**North Manchester General Hospital:** Ed Wilkins; Yvonne Clowes; Jennifer Cullie; Cynthia Murphy; Christina Martin; Valerie George; Andrew Thompson

**Homerton University Hospital:** Jane Anderson; Sifiso Mguni; Damilola Awosika; Rosalind Scourse

**East Sussex Sexual Health Clinic:** Kazeem Aderogba; Caron Osborne; Sue Cross; Jacqueline Whinney; Martin Jones

**Newham University Hospital:** Rebecca O’Connell, Cheryl Tawana

**Whipps Cross University Hospital:** Monica Lascar, Zandile Maseko, Gemma Townsend, Vera Theodore, Jas Sagoo

The ASTRA study presents independent research funded by the National Institute for Health Research (NIHR) under its Programme Grants for Applied Research funding scheme (RP-PG-0608-10142). The ASTRA Study Group acknowledges the support of the NIHR, through the Comprehensive Clinical Research Network. The views expressed in this presentation are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.
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