

Article

Rates of depression among men attending high-HIV-caseload general practices in Australia

Limin Mao PhD

Research Fellow

Susan C Kippax PhD

Professor

Christy E Newman PhD

Research Fellow

National Centre in HIV Social Research, The University of New South Wales, Sydney, Australia

Gavin Andrews MD

Professor, Clinical Research Unit for Anxiety and Depression, St Vincent's Hospital, Sydney, Australia

Gary Rogers PhD

Associate Professor, School of Medicine, Griffith University, Gold Coast, Qld 4222, Australia

Deborah C Saltman MD

Professor, Institute of Postgraduate Medicine, Brighton and Sussex Medical School, Brighton, UK

Michael R Kidd MD

Professor, Discipline of General Practice, The University of Sydney, Sydney, Australia

ABSTRACT

This paper compares rates of current depression among men attending high-HIV-caseload general practices in New South Wales and South Australia. Current depression was assessed by the treating general practitioner (GP), using the nine-item Patient Health Questionnaire (PHQ-9), and by patient self-reporting. The study found that GPs, the PHQ-9 screening tool and patients were equally

likely to identify current depression. High rates of depression were observed among the men attending general practices, with the highest rates among men with HIV and men who did not identify as either heterosexual or homosexual.

Keywords: depression, HIV, men

Introduction

In Australia, people who identify as homosexual have a higher rate of depression than those who identify as heterosexual; and people with HIV are highly susceptible to depression.^{1–4} Gay men comprise the majority of people with HIV in Australia.⁵ General practitioners (GPs) who are accredited under Section 100 of the Pharmaceutical Benefit Scheme to prescribe antiretroviral drugs (i.e. HIV s100 GP

prescribers) are at the forefront of managing HIV as well as its co-morbidities such as depression.^{3,6} One study in Melbourne, of people with HIV attending either general practices specialising in HIV medicine or an infectious disease outpatient clinic, reported that 20% had major depression at the time of the study.³ A study in Adelaide, among men attending a general practice with a special interest in HIV care,

reported an even higher rate of current major depression (30%).⁴ However, no study to date has reported rates of depression stratified by both sexual identification and HIV status among men attending general practices in Australia.

A sample of men with or without HIV, who self-identified as gay/homosexual, heterosexual, or other, were recruited from four urban and two non-urban high-HIV-caseload general practices in New South Wales and South Australia. In this paper, we report rates of current depression by patients' self-reported HIV status and sexual identification. We investigated the concordance between three measures of current depression: clinical diagnosis by a GP; the nine-item Patient Health Questionnaire (PHQ-9); and patient self-reporting. The first two measures are based on the criteria for major depression of the *Diagnostic and Statistical Manual of Mental Disorders*, version four (DSM-IV).⁷

Methods

This was a multistage, multisite, and mixed-method study. Ethics approvals were granted by the National Research and Evaluation Ethics Committee of the Royal Australian College of General Practitioners as well as the human research ethics committees at the Universities of New South Wales and Adelaide.

The study took place in six general practices that provide care to large numbers of people with HIV: three Sydney practices located in an area where a large number of gay men live and socialise; one Adelaide practice that operates a care and prevention programme specifically for gay men and people with HIV;⁴ and two practices in a rural town in New South Wales that together provide medical care to the majority of people with HIV in that region.

As part of the study, between March and June 2007 every male patient visiting his GP at the participating practices on the days that the first author conducted patient recruitment was invited to self-complete a patient survey. The patient survey included questions about socio-economic status, sexual identity and HIV status, as well as the use of alcohol and other drugs. The average response rate across the sites was 75%. After each consultation with a participating male patient, the treating GP was asked to assess the patient's likelihood of having clinical depression according to the DSM-IV criteria and to note whether the patient was undergoing treatment for depression at the time.

The three depression assessments were conducted in the following way. In the GP survey, with reference to the DSM-IV criteria, GPs rated the likelihood

of 'current' clinical depression on a four-point Likert scale for each participating male patient. At the same time, the patients completed a depression screening tool, the nine-item Patient Health Questionnaire (PHQ-9), which is based on the DSM-IV criteria and has demonstrated validity and reliability.⁸ It comprises nine items relating to symptoms in the prior two weeks and these items were summarised into a score for each patient. Current major depression was defined as a PHQ-9 score greater than 9.⁸ In the same questionnaire, patients were also asked whether they believed that they were 'currently' depressed.

Descriptive statistics and Pearson's Chi-square tests were used to compare the rates of current depression between groups defined by HIV status and by sexuality, and using each of the three measures (i.e. GP diagnosis, PHQ-9 and patient self-reporting).

Results

Seven-hundred and twenty-one men had matching data from both the GP survey and the patient survey. The majority of these men had been recruited from the urban general practices: 78.2% of the men living in Sydney and another 15.0% in Adelaide at the time of the survey. As expected of a population of men attending urban general practices treating high numbers of people with HIV,^{3,4} 76.1% of the men in the sample self-identified as gay or homosexual. Two-hundred and thirty-one men (32.0%) reported they were HIV-positive, with the majority (92.2%) self-identifying as gay/homosexual. The mean age of all participants was 45.3 years (range 19–88 years); 37.9% had a university undergraduate or higher education; and 63.1% reported a weekly income (before tax) of A\$600 or more; 40.2% of the men were in a same-sex relationship, and 12.8% were in an opposite-sex relationship at the time of the survey. The use of alcohol and other drugs for recreational purposes was high: in the 12 months prior to the survey, 283 men (39.2%) reported having had six or more standard drinks on one occasion at least monthly; and in the six months prior to the survey, 511 men (70.9%) reported having used a recreational drug other than alcohol, including 67 (9.3%) who reported at least one episode of drug injection in the previous six months.

Of the 721 men, 27.5% were assessed by their GPs as being clinically depressed at the time of the survey; 25.4% were identified by the PHQ-9 as having current major depression; and 32.2% of patients self-reported that they were depressed. The reliability of the PHQ-9 scale was very high (Cronbach's $\alpha = 0.93$).

Of the 198 men who were identified by their GPs as clinically depressed, 135 (68.2%) had had some assessment or treatment for an emotional or a mental health problem including depression in the six months prior to the survey, and 123 (62.1%) were being treated for depression including 86 (43.4%) who were taking antidepressant medication at the time of the survey. Similarly, of the 183 men who were screened by the PHQ-9 as having major depression, 118 (64.5%) had had some form of mental health assessment or treatment in the six months prior to the survey, with 109 (59.6%) being treated for depression including 76 (41.5%) who were taking antidepressant medication at the time of the survey. Of the 232 men who self-reported depression including major depression, an even higher proportion of men reported a clinical intervention for depression, with 174 (75.0%) having had some form of mental health assessment or treatment in the six months prior to the survey, and 187 (80.6%) being treated for depression including 123 (53.0%) who were taking antidepressant medication at the time of the survey.

Of the 704 men for whom we had data on all three measures, there was agreement among all three measures in the assessment of depression for 99 men (14.1%). In particular, the agreement between GP clinical diagnosis and the PHQ-9 screen for major depression was moderately high (Cohen's $\kappa = 0.48$; see Figure 1). There was also agreement between the three measures that 385 men (54.7%) did not have major depression. Using the PHQ-9 screening results as the standard, the psychometric properties of the GP diagnosis of current depression were: sensitivity 64.4%; specificity 84.7%; positive predictive value 59.2%; and negative predictive value 87.4%.

When grouped by patients' self-reported HIV-status (see Table 1), the two DSM-IV-based measures indicated that the HIV-positive men had the highest rates of major depression, at over 30%. Across all three HIV-status categories, the overall rates of clinical

depression identified by the participating GPs closely corresponded with the overall rates of major depression as measured by the PHQ-9 screening tool and with the overall rates of depression as reported by the patients themselves.

With regard to self-reported sexual identification, the two DSM-IV-based measures revealed that men who regarded themselves as neither gay/homosexual nor heterosexual had the highest rates of major depression, at over 40%, although the sample size of this subgroup was small. Across all three sexual identity categories, again, the participating GPs, the screening tool, and the male patients themselves were equally likely to identify current depression (Table 1).

Discussion

Our results validate previous findings that rates of depression are high among men attending high-HIV-caseload general practices in Australia (above 20%).^{1,3,4} In particular, men with HIV were the most susceptible to depression. Consistent with the previous finding from a community sample of adults in Australia, in our clinical sample, men who self-identified as neither heterosexual nor homosexual were more at risk of major depression than their counterparts.²

The findings of our study differ from that of one German study, which reported that the PHQ-9 screening tool outperformed physicians in recognising major depression.⁹ We found that the three depression assessments we investigated – GP clinical diagnosis, the PHQ-9 screening tool, and patient self-reporting – were reasonably congruent. In particular, the agreement between the PHQ-9 and the participating GPs was moderately high.

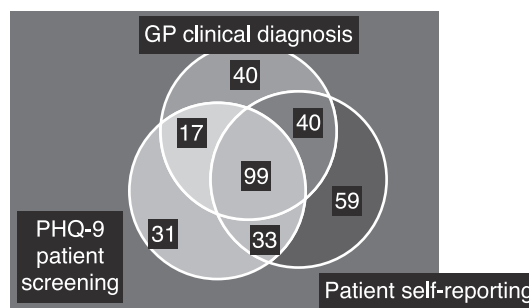


Figure 1 Rates of current depression as measured by patient self-reporting, the PHQ-9 patient screening tool, and GP clinical diagnosis among men attending high-HIV-caseload general practices in New South Wales and South Australia ($n = 704$).⁹ Out of the 721 men who had data from both the patient and GP surveys, 17 men were excluded due to missing data

Table 1 Rates of current depression among men attending high-HIV-caseload general practices in New South Wales and South Australia by self-reported HIV status and sexual identification (*n*=721)

	DSM-IV based		Patient self-report: depression (%)
	PHQ-9 screening: major depression (%)	GP diagnosis: clinical depression (%)	
HIV status (<i>n</i>)			
Positive ^a (231)	32.0	32.0	40.5
Negative (401)	21.4	26.0	30.3
Unknown (89)	26.4	23.6	23.5
<i>P</i> value	0.013 ^b	0.178	0.005 ^b
Sexual identification (<i>n</i>)			
Homosexual (549)	32.3	26.0	24.8
Heterosexual (127)	28.2	29.1	22.8
Other (45)	51.2	43.2	41.9
<i>P</i> value	0.020 ^b	0.045 ^b	0.035 ^b

^a 213 out of the 231 HIV-positive men (92.2%) self-identified as gay or homosexual

^b Statistically significant, based on Pearson's χ^2

By utilising DSM-IV criteria, this study, like the previous Melbourne study, shows that GP clinical diagnosis and a patient screening tool can achieve moderate concordance in identifying major depression (over 60% concordance). This suggests that HIV s100 GP prescribers in Australia are well-attuned to diagnosing depression among their male patients. In part this may be attributable to the quality of the long-term doctor-patient relationships that these GPs build and sustain with their patients. Most of these GPs screen their patients routinely for co-morbidities, such as depression, particularly their patients with HIV.^{6,10} Male patients attending high-HIV-caseload urban general practices appear, in general, to be reasonably aware of depression as a diagnostic entity.¹¹ Most men in our sample appeared able and willing to acknowledge and disclose depression. Our data have also demonstrated that, even in a busy general practice setting, it is feasible to screen routinely for depression by implementing a short patient self-screening tool such as the PHQ-9.¹² Screening for depression, as suggested by existing evidence in Australia and elsewhere, should be considered for integration into the enhanced general practice management of people with chronic illness such as HIV.¹²⁻¹⁴

There are some limitations to this study. The number of heterosexual men recruited into the study was small. Furthermore, when compared with heterosexual men in the general population, those in our

sample reported much higher rates of recreational drug use and drug injection. This suggests that heterosexual men attending general practices that specialise in HIV medicine may differ from those attending general practices that serve different population groups.

ACKNOWLEDGEMENTS

The authors thank all participating general practices, their staff, and patients who agreed to participate in this study.

REFERENCES

- 1 Goldney RD, Fisher LJ, Wilson DH *et al*. Major depression and its associated morbidity and quality of life in a random, representative Australian community sample. *Australian and New Zealand Journal of Psychiatry* 2000;34:1022-9.
- 2 Jorm AF, Korten AE, Rodgers B *et al*. Sexual orientation and mental health: results from a community survey of young and middle-aged adults. *British Journal of Psychiatry* 2002;180:423-7.
- 3 Komiti A, Judd F, Grech P *et al*. Depression in people living with HIV/AIDS attending primary care and outpatient clinics. *Australian and New Zealand Journal of Psychiatry* 2003;37:70-7.
- 4 Rogers G, Curry M, Oddy J *et al*. Depressive disorders and unprotected casual anal sex among Australian

- homosexually active men in primary care. *HIV Medicine* 2003;4:271-5.
- 5 National Centre in HIV Epidemiology and Clinical Research (NCHECR). *HIV/AIDS, Viral Hepatitis and Sexually Transmissible Infections in Australia Annual Surveillance Report 2007*. Sydney: NCHECR, the University of New South Wales and Canberra: Australian Institute of Health and Welfare (AIHW), 2007.
 - 6 Kidd M and Anderson J. Antiretroviral medications and HIV. *Australian Family Physician* 2002;31:135-9.
 - 7 American Psychiatric Association (APA). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) Criteria for Major Depressive Episode*. Washington DC: APA, 1994.
 - 8 Kroenke K, Spitzer RL and Williams JB. The PHQ-9: validity of a brief depression severity measure. *Journal of General Internal Medicine* 2001;16:609-13.
 - 9 Löwe B, Spitzer RL, Gräfe K *et al.* Comparative validity of three screening questionnaires for DSM-IV depressive disorders and physicians' diagnoses. *Journal of Affective Disorder* 2004;78:131-40.
 - 10 Naismith SL, Hickie IB, Scott EM *et al.* Effects of mental health training and clinical audit on general practitioners' management of common mental disorders. *Medical Journal of Australia* 2001;175:S42-7.
 - 11 Highet NJ, Hickie IB and Davenport TA. Monitoring awareness of and attitude to depression in Australia. *Medical Journal of Australia* 2002;176:S63-8.
 - 12 Hickie IB, Davenport TA and Ricci CS. Screening for depression in general practice and related medical settings. *Medical Journal of Australia* 2002;177:S111-16.
 - 13 Gilbody S, Sheldon T and Wessely S. Should we screen for depression? *BMJ* 2006;332:1027-30.
 - 14 Andrews G. Should depression be managed as a chronic disease? *BMJ* 2001;322:419-21.

CONFLICTS OF INTEREST

None declared.

FUNDING

This project is funded by a National Health and Medical Research Council General Practice Clinical Research Program Grant.

ADDRESS FOR CORRESPONDENCE

Dr Limin Mao, National Centre in HIV Social Research, Level 2 Webster Building, The University of New South Wales, Sydney, NSW 2052, Australia. Tel: +61 (2)9385 4500; fax: +61 (2)9385 6455; email: limin.mao@unsw.edu.au

Received 30 May 2008

Accepted 8 July 2008

