

undertaking or recommending couple counselling, and better links with specialist agencies.

Medical administration services should ensure that doctors have access to debriefing; supervision; and legal, police, and welfare agencies. When such assistance is in place doctors will feel better supported and more confident to engage with this critical underlying issue affecting their patients' health and wellbeing.

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- 1 Eisenstat SA, Bancroft L. Domestic violence. *N Eng J Med* 1999;341:886-92.
- 2 Hegarty K, Bush R. Prevalence and associations of partner abuse in women attending general practice: a cross sectional survey. *Aust NZ J Public Health* 2002;26:437-42.
- 3 Oriel KA, Fleming MF. Screening men for partner violence in a primary care setting: a new strategy for detecting domestic violence. *J Fam Pract* 1998;46:493-8.
- 4 Webb E, Shankleman J, Evans MR, Brooks R. The health of children in refugees for women victims of domestic violence: cross sectional descriptive study. *BMJ* 2001;323:210-3.

- 5 Ferris LE, Norton P, Dunn EV, Gort EH. Clinical factors affecting physician's management decisions in cases of female partner abuse. *Fam Med* 1999;31:415-25.
- 6 Richardson J, Coid J, Petrukevich A, Chung WS, Moorey S, Feder G. Women who experience domestic violence and women survivors of childhood sexual abuse: a survey of health professionals' attitudes and clinical practice. *Br J Gen Pract* 2001;51:468-70.
- 7 Sasseti M. Domestic violence. *Primary Care* 1993;20:289-305.
- 8 Wathen NC, MacMillan HL. Interventions for violence against women: scientific review. *JAMA* 2003;289:589-600.
- 9 Yin R. *Case study research: design and methods*. Second ed. California: Sage, 1994:171. (Applied Social Methods Series, vol 5.)
- 10 Strauss A, Corbin J. *Basics of qualitative research: grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications, 1990.
- 11 American Medical Association diagnostic and treatment guidelines on domestic violence. *Arch Fam Med* 1992;Sept(1):39-47.
- 12 Adams D. Guidelines for doctors on identifying and helping their patients who batter. *J Am Med Womens Assoc* 1996;51:123-6.
- 13 Mintz HA, Cornett FW. When your patient is a batterer: what you need to know before treating perpetrators of domestic violence. *Postgrad Med* 1997;101:219-28.
- 14 Ferris LE, Norton PG, Dunn EV, Gort EH, Degani N. Guidelines for managing domestic abuse when male and female partners are patients of the same physician. *JAMA* 1997;278:851-7.
- 15 Edleson J. Domestic violence and children. *Future Child* 1999;9(3).
- 16 Hegarty KL, Taft AJ. Overcoming the barriers to disclosure and inquiry of partner abuse for women attending general practice. *Aust NZ J Public Health* 2001;25:433-7.
- 17 Gerbert B, Abercrombie P, Caspers N, Love C, Bronstone A. How health care providers help battered women: the survivor's perspective. *Women Health* 1999;29:115-35.
- 18 Bensing JM, Van Den Brink-Muinen A, De Bakker D. Gender differences in practice style: a Dutch study of general practitioners. *Med Care* 1993;31:219-29.
- 19 Brandt Jr EN. Curricular principles for health professions education about family violence. *Acad Med* 1997;72(1, suppl):S51-8.
- 20 Warshaw C. Intimate partner abuse: developing a framework for change in medical education. *Acad Med* 1997;72(1, suppl):S26-37.
- 21 Gerbert B, Caspers N, Bronstone A, Moe J, Abercrombie P. A qualitative analysis of how physicians with expertise in domestic violence approach the identification of victims. *Ann Intern Med* 1999;131:578-84. (Accepted 22 December 2003)

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## Association between depression and abuse by partners of women attending general practice: descriptive, cross sectional survey

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### Abstract

**Objective** To explore the association between depression and physical, emotional, and sexual abuse by partners or ex-partners of women attending general practice.

**Design** Descriptive, cross sectional survey.

**Setting** 30 general practitioners in Victoria, Australia.

**Participants** 1257 consecutive female patients.

**Main outcome measures** Some type of abuse in an adult intimate relationship (composite abuse scale), depression (Beck depression inventory or Edinburgh postnatal depression scale), and physical health (SF-36).

**Results** 18.0% (218/1213) of women scored as currently probably depressed and 24.1% (277/1147) had experienced some type of abuse in an adult intimate relationship. Depressed women were significantly more likely to have experienced severe combined abuse than women who were not depressed after adjusting for other significant sociodemographic variables (odds ratio 5.8, 95% confidence interval 2.8

to 12.0). These variables included not being married, having a poor education, being on a low income, being unemployed or receiving a pension, pregnancy status, or being abused as a child.

**Conclusion** Physical, emotional, and sexual abuse are strongly associated with depression in women attending general practice. Doctors should sensitively ask depressed women about their experiences of violence and abuse in intimate relationships. Research into depression should include measures of partner abuse in longitudinal and intervention studies.

### Introduction

Women experience depression about twice as much as men.<sup>1</sup> This difference may be accounted for by women experiencing greater poverty, differing social roles and sex discrimination, more negative life events, and violence and abuse.<sup>1</sup> A meta-analysis on the prevalence of mental health problems among women with a history of violence from a partner found that compared with women who had not been abused just

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under a half of the abused women had clinical depression.<sup>2</sup> Data on this subject are limited in the primary care setting.<sup>3,4</sup> We therefore explored the association between depression and different types of abuse by a partner in women attending general practice.

Methods

We stratified general practitioners who had previously volunteered for a women's health education programme according to whether their practices were in a non-urban or metropolitan region. They were selected at random until we had recruited practitioners from 10 rural and 20 metropolitan regions. From August to December 2000, a researcher invited all women aged 16-50 years presenting for themselves or with relatives

to complete a questionnaire. Women were excluded if they lacked the mental or physical capacity to answer the questionnaire, did not understand English, or attended with a male partner.

Our sample size calculation was based on published data. We estimated that we required 1084 women (power 80%, significance level 5%, two sided test) from 30 practices to detect a difference of 12% in the proportion of depressed women between those who had or had not been abused by a partner, assuming an intraclass correlation of 0.02 and a 20% prevalence for depression and abuse.<sup>5,6</sup>

The questionnaire provided us with data on socio-demographic characteristics and lifetime abuse and history of partner abuse in the past 12 months using the composite abuse scale; depression was assessed with the Beck depression inventory or Edinburgh postnatal depression scale, and physical health was assessed with the SF-36.<sup>7-11</sup> We converted the postcodes of the participants' current addresses into the index of relative socioeconomic disadvantage.<sup>12</sup> Depression was defined as a Beck depression inventory score of 16 or more or an Edinburgh postnatal depression scale score of 12 or more.<sup>7,10,13</sup> A priori we hypothesised that partner abuse would be a strong predictor of depression.

Data were analysed with STATA version 7.0. We used bivariate analyses (adjusting for clustered data) to examine associations between women (who had ever been in an adult intimate relationship) identified as probably depressed or not depressed, with self report of ever abused, abused by a partner, abused as a child, composite SF-36 physical health score, and patient characteristics. Multivariate logistic regression was used to investigate the association between partner abuse and probable depression, adjusting for the other variables.

Results

We approached 39 eligible general practitioners. Five of these had moved practice and four refused to participate, giving a response rate of 77%. Participants differed from the Australian general practitioner population in that more were female (18, 60%), worked part time (13/27, 48%), and had graduated recently (17, 59%).

Overall, 133 (7.0%) female patients had previously attended and 141 of 1896 patients aged 16-50 years were excluded because they were accompanied by a partner (62), were too ill (31), had comprehension or motor problems (22), were non-English speakers (16), or had difficulty seeing or hearing (10). Overall, 1257 (77.5%) eligible women completed the questionnaire, 66 (4.1%) were missed, and 299 (18.4%) refused. Most of the 1257 patients attended for themselves (868, 69.1%) and 1210 (96.3%) had been in an adult intimate relationship (table 1). When we compared the quintile percentages of index of relative socioeconomic disadvantage, fewer women were represented with the combination of low income, limited training, and unskilled occupations.

Prevalence

Depression

On a general question about depression, 543 of 1227 (44.3%) women reported ever experiencing depression

**Table 1** Characteristics of women attending general practice who had ever been in an intimate relationship as an adult compared with females in Australian population

Characteristics	No (%) of participants (n=1257)	% of Australian population
Marital status:		(n=4 770 532)*
Never married	263 (21.1)	28.5
Married	721 (57.8)	50.1
Defacto	130 (10.4)	NA
Separated	56 (4.5)	3.6
Widowed	8 (0.6)	9.7
Divorced	70 (5.6)	8.1
Age:		(n=4 772 167)
16-19	89 (7.1)	10.9
20-29	263 (21.1)	26.8
30-39	455 (36.5)	30.3
40-50	439 (35.2)	32.1
Socioeconomic index†:		(n=4 772 167)
10th centile	47 (3.9)	10
25th centile	188 (19.3)	25
50th centile	320 (45.7)	50
75th centile	185 (60.9)	75
90th centile	475 (100)	90
Pregnant	79 (6.3)	NA
Children cohabiting	755 (60.1)	NA
Born in Australia	1061 (85.0)	72‡
English first language	1179 (95.3)	84.0§
Aboriginals or Torres Strait islanders	23 (1.9)	2.2‡
Education level:		(n=6 664 135)
<10 years	99 (8.0)	19.3
10-12 years	577 (46.4)	38.1
Certificate or diploma	239 (19.2)	25.6
Bachelor degree	330 (26.5)	17.0
Employment status:		(n=6 763 900)¶
Paid employment	805 (65.0)	60.0
Not employed	434 (35.0)	40.0
Yearly income (before tax):		(n=9 354 300)**
≤\$A25 999	371 (31.4)	46.0
≥\$A26 000	812 (68.6)	54.0
Source of income:		
Wage	1017 (81.8)	56.7††
Pension or benefit	168 (13.5)	28.0
Other	59 (4.7)	15.3
Private health insurance	752 (60.7)	44.8‡‡

Denominators vary owing to missing responses.  
Some data derived from [www.phiac.gov.au/statistics/membershipcoverage/introduction.htm](http://www.phiac.gov.au/statistics/membershipcoverage/introduction.htm) and Australian Bureau of Statistics.  
\*Women aged 15-49.  
†Index of relative socioeconomic disadvantage (number ranged from 1235 to 1246 for personal characteristics).  
‡All women (n=9 610 329).  
§All people (n=17 867 816).  
¶Civilian women aged 15-69.  
\*\*All households.  
††Number not given; percentage of all income units.  
‡‡Number not given; all Australians, adjusted for veteran's gold card.

lasting more than two weeks. Most (417, 76.8%) had ever told a general practitioner about that depression, of which two thirds (273, 65.5%) had told the participating general practitioner. For current mood (last week), 218 of 1213 (17.9%) women scored as probably depressed on the Beck depression inventory or Edinburgh postnatal depression scale.

#### *Abuse by partner*

One third (437/1173, 37.3%) of participants who had ever been in an adult intimate relationship stated that they had ever experienced some form of abuse. One third of these (142/417, 34%) had ever told a general practitioner about that abuse, of which one third (49/140, 35%) had told the participating general practitioner, and one in five (81/411, 20%) had ever been asked by a general practitioner. One quarter (277/1147, 24.1%) of participants scored as having experienced some type of abuse on the composite abuse scale in the past 12 months of a current or previous relationship. Severe combined abuse was experienced by 8.8% (101) of women, physical and emotional abuse or harassment by 5.7% (65), physical abuse alone

by 7.1% (82), and emotional abuse or harassment alone by 2.5% (29).

#### **Association with depression**

Compared with women who were not depressed, those who scored in the probably depressed range were more likely to be unmarried, on a pension or low income, receiving benefits, unemployed, or to have had a poorer education (table 2). Probably depressed women were much more likely to have experienced some form of abuse (physical, emotional, or sexual) as a child (odds ratio 3.0, 95% confidence interval 2.1 to 4.2), and this remained significant (2.0, 1.3 to 2.9) when adjusted for sociodemographic variables, physical health (SF-36), and intimate partner abuse as an adult. Furthermore, probably depressed women were more likely to have experienced partner abuse, particularly severe combined abuse (8.0, 4.8 to 13.0) and physical and emotional abuse or harassment (8.1, 4.4 to 15.0; table 2). Even when these values were adjusted for all other variables, multidimensional measures of partner abuse remained highly associated with probable depression, with the magnitude of the effect being large (table 2).

**Table 2** Association between probable depression and abuse by partner, abuse as a child, and sociodemographic factors for women attending general practice who had ever been in an intimate relationship as an adult (n=1210). Values are numbers (percentages) unless stated otherwise

Characteristic	Probably depressed	Not depressed	Odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Total	207 (17.6)	966 (82.4)	—	—
Ever abused*	130 (65.0)	298 (31.6)	4.0 (3.0 to 5.5)	—
Type of abuse†:				
None	91 (46.7)	758 (81.9)	1	1
Severe combined	48 (24.6)	50 (5.4)	8.0 (4.8 to 13)	5.8 (2.8 to 12)
Physical and emotional or harassment	32 (16.4)	33 (3.6)	8.1 (4.4 to 15)	7.5 (3.9 to 14)
Physical only	8 (4.1)	21 (2.3)	3.2 (1.58 to 6.4)	3.5 (1.7 to 7.2)
Emotional or harassment	16 (8.2)	63 (6.8)	2.1 (1.07 to 4.2)	2.1 (0.99 to 4.3)
Abused as child‡	98 (49.2)	231 (24.4)	3.0 (2.1 to 4.2)	2.0 (1.3 to 2.9)
Age (years):				
16-20	23 (11.1)	59 (6.1)	1.7 (0.93 to 3.1)	1.9 (0.85 to 4.1)
21-30	51 (24.6)	210 (21.9)	1.1 (0.70 to 1.6)	1.2 (0.61 to 2.2)
31-40	63 (30.4)	386 (40.2)	0.71 (0.51 to 1.0)	0.95 (0.53 to 1.7)
41-50	70 (33.8)	306 (31.8)	1	1
Marital status:				
Married or defacto	108 (52.2)	714 (74.1)	1	1
Never married or single	53 (25.6)	166 (17.2)	2.1 (1.4 to 3.2)	1.0 (0.56 to 2.0)
Separated, widowed, or divorced	46 (22.2)	84 (8.7)	3.6 (2.3 to 5.6)	1.2 (0.63 to 2.3)
Education level:				
Certificate, diploma, bachelor degree or higher	77 (37.4)	480 (49.9)	1	
Completed year 10 or 12§	97 (47.1)	422 (43.9)	1.4 (1.1 to 1.9)	1.2 (0.78 to 1.8)
Left school before year 10	32 (15.5)	60 (6.2)	3.3 (2.1 to 5.3)	2.6 (1.5 to 4.4)
Not in paid employment	92 (44.7)	306 (31.9)	1.7 (1.2 to 2.4)	1.2 (0.72 to 1.9)
Income source:				
Pension or benefit	60 (29.3)	97 (10.1)	3.7 (2.5 to 5.5)	1.3 (0.68 to 2.4)
Wages, salary, or other	145 (70.7)	867 (89.9)	1	1
Total yearly income (before tax):				
≤\$A25 999	101 (51.5)	240 (26.0)	3.0 (2.3 to 4.0)	—
≥\$A26 000	95 (48.5)	684 (74.0)	1	—
Pregnant	6 (2.9)	71 (7.4)	0.38 (0.14 to 1.0)	0.21 (0.08 to 0.55)
Children (<16 years) cohabiting	114 (55.1)	614 (63.7)	0.70 (0.51 to 1.0)	0.64 (0.38 to 1.1)
Postnatal	15 (7.2)	69 (7.1)	1.0 (0.62 to 1.7)	1.5 (0.82 to 2.8)
Mean SF-36 (SD) health score	46.3 (11.9)	49.8 (9.2)	0.97 (0.95 to 0.99)	0.98 (0.95 to 1.00)

£1.00 (\$1.84; €1.52)

Denominators vary due to missing responses. All listed variables adjusted for in multivariate analysis except for ever abused and total yearly income as they were highly correlated with current partner abuse and source of income, respectively.

\*37 women did not have a response for depression.

†Composite abuse scale.

‡Physical, emotional, or sexual.

§Year 10 pupils are aged 15 or 16 and year 12 pupils are aged 17 or 18.

### What is already known on this topic

The association between depression and partner abuse is strong for women

Limited data are available from studies in primary care

Most studies have concentrated on physical violence

### What this study adds

Physical, emotional, and sexual abuse is a strong predictor of probable depression

Researchers should measure partner abuse in longitudinal and intervention depression studies

Doctors should consider partner abuse in women with depression

## Discussion

The association between depression and abuse by a partner in women presenting to their general practitioners is significant even after adjustment for social indicators associated with depression.<sup>1</sup> This confirmed the findings from other settings of women experiencing current or past abuse by a partner.<sup>2 14 15</sup> Although we cannot infer causation, we have some evidence that partner abuse may contribute to depression rather than the opposite.<sup>1</sup>

Our study is the first to look at the association between depression and types of abuse (emotional, physical, sexual) for women attending a variety of general practices. We recruited 30 general practitioners from practices with an 18% prevalence for depression and 24% prevalence for abuse, similar to other general practitioner samples using the same instruments.<sup>5 6</sup>

Limitations of our study include the use of self report to measure outcomes and the cross sectional design, which precludes a causal inference. Literature on depression has largely ignored evaluating the differences between the sexes in response to treatments and the role of partner abuse as a contributing factor in persistence or relapse of depression.<sup>16-18</sup> Untangling the nature of the association requires longitudinal studies, and researchers in depression should consider measuring partner abuse. In treating women who are depressed, doctors should be alert to the possibility of abuse and the lack of evidence about the effectiveness of depression interventions for women experiencing abuse. Ignoring the part partner abuse plays in depression reinforces the hidden nature of this issue for women.<sup>19</sup>

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- 1 Astbury J, Cabral M. *Women's mental health: an evidence based review*. Geneva: World Health Organization, 2000.
- 2 Golding J. Intimate partner violence as a risk factor for mental disorders: a meta-analysis. *J Fam Violence* 1999;14:99-132.
- 3 Coid J, Petruckevitch A, Chung W, Richardson J, Feder G. Abusive experiences and psychiatric morbidity in women primary care attenders. *Br J Psychiatry* 2003;183:332-9.
- 4 McCauley J, Kern DE, Kolodner K, Smith J. The "battering syndrome": prevalence and clinical characteristics of domestic violence in primary care internal medicine practices. *Ann Intern Med* 1995;123:737-46.
- 5 Hegarty K, Bush R. Prevalence of partner abuse in women attending Australian general practice: a cross-sectional survey. *Austr NZ J Public Health* 2002;26:437-42.
- 6 Katon W, Schulberg H. Epidemiology of depression in primary care. *Gen Hosp Psychiatry* 1992;14:237-47.
- 7 Hegarty KL, Sheehan M, Schonfeld C. A multidimensional definition of partner abuse: development and preliminary validation of the composite abuse scale. *J Fam Violence* 1999;14:399-414.
- 8 Dowrick C. Does testing for depression influence diagnosis or management by general practitioners? *Fam Pract* 1995;12:461-5.
- 9 Cox JL, Holden JM, Sagovsky R. Detection of postnatal depression. Development of the 10-item Edinburgh postnatal depression scale. *Br J Psychiatry* 1987;150:782-6.
- 10 Boyce P, Stubbs J, Todd A. The Edinburgh postnatal depression scale: validation for an Australian sample. *Austr NZ J Psychiatry* 1993;27:472-6.
- 11 McHorney CA, Ware JE, Lu JFR, Sherbourne CD. The MOS 36-item short form health survey (SF-36): III. Tests of data quality, scaling assumptions and reliability across diverse patient groups. *Med Care* 1994;32:40-66.
- 12 Castles L. *Information paper 1991 census: socio-economic indexes for areas*. Canberra, Australia: Australian Bureau of Statistics, 1991.
- 13 Murray L, Carothers AD. The validation of the EPDS on a community sample. *Brit J Psychiatry* 1990;157:288-90.
- 14 Campbell J. Health consequences of intimate partner violence. *Lancet* 2002;359:1331-6.
- 15 Roberts GL, Williams GM, Lawrence JM, Raphael B. How does domestic violence affect women's mental health? *Wom Health* 1998;28:117-29.
- 16 MacGillivray S, Arrol B, Hatcher S, Ogston S, Reid I, Sullivan F. Efficacy and tolerability of selective serotonin inhibitors compared with tricyclic antidepressants in depression treated in primary care: systematic review and meta-analysis. *BMJ* 2003;326:1014-7.
- 17 Van Weel-Baumgarten E, Schers H, van den Bosch WJ, van den Hoogen H, Zitman FG. Long-term follow-up of depression among patients in the community and in family practice settings: a systematic review. *J Fam Pract* 2000;49:1113-20.
- 18 Herrman H, Patrick D, Diehr P, Martin M, Fleck M, Simon G. Longitudinal investigation of depression outcomes in primary care in six countries: the LIDO study. Functional status, health service use and treatment of people with depressive symptoms. *Psychol Med* 2002;32:889-902.
- 19 Jewkes R. Intimate partner violence: causes and prevention. *Lancet* 2002;359:1423-9.

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