

Experiences of occupational violence in Australian urban general practice: a cross-sectional study of GPs

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Workplace violence has been recognised as a significant problem in general practice.^{1,2} A number of studies, especially questionnaire-based retrospective studies from the United Kingdom, have established a relatively high prevalence of violence in the work experiences of general practitioners and have characterised many aspects of the nature of such violence.³⁻⁸ Violence in this context encompasses not only physical injury to the GP but also verbal abuse, threatening behaviour and sexual harassment, violence directed towards general practice staff, and the damaging of property. In these studies, verbal abuse has been consistently the most prevalent type of violence experienced by GPs, but there have also been consistent findings of more serious types of violence — assault and stalking — albeit at low prevalence.

Studies in rural Australia⁹⁻¹¹ have demonstrated that occupational violence is also a significant problem for Australian rural GPs. However, there has been a lack of research in Australian urban general practice on this important issue. Furthermore, previous studies of violence in general practice have employed univariate analysis only. Given the likely clustering of socioeconomic, mental-health, and drug- and alcohol-related problems (factors associated with violence in these earlier studies), multivariate analysis is especially indicated for studies in this area. In response, we employ multivariate analyses in reporting on prevalence and characteristics of violence in Australian urban general practice and how these correlate with GP demographics.

METHODS

Survey

Following a qualitative study involving GP focus groups conducted in 2003,¹² a 60-item questionnaire was constructed and

ABSTRACT

Objective: To establish the prevalence and characteristics of occupational violence in Australian urban general practice, and examine practitioner correlates of violence.

Design, setting and participants: Cross-sectional questionnaire survey mailed to all members ($n = 1085$) of three urban divisions of general practice in New South Wales in August and September 2004. The three divisions were chosen to provide a range of socioeconomic status (SES) demographics.

Main outcome measures: Occupational violence towards general practitioners during the previous 12 months.

Results: 528 GPs returned questionnaires (49% response rate). Of these, 63.7% had experienced violence in the previous year. The most common forms of violence were “low level” violence — verbal abuse (42.1%), property damage/theft (28.6%) and threats (23.1%). A smaller proportion of GPs had experienced “high level” violence, such as sexual harassment (9.3%) and physical abuse (2.7%). On univariate analysis, violence was significantly more likely towards female GPs ($P < 0.001$), less experienced GPs ($P = 0.003$) and GPs working in a lower SES status area ($P < 0.001$), and among practice populations encompassing greater social disadvantage ($P = 0.006$), mental health problems ($P < 0.001$), and drug- and alcohol-related problems ($P < 0.001$). Experience of violence was greater for younger GPs ($P = 0.005$) and those providing after-hours care ($P = 0.033$ for after-hours home visits). On multivariate analysis, a significant association persisted between high level violence and lower SES area (odds ratio [OR], 2.86), being female (OR, 5.87), having practice populations with more drug-related problems (OR, 5.77), and providing home visits during business hours (OR, 4.76). More experienced GPs encountered less violence (OR, 0.77) for every additional 5 years of practice.

Conclusion: Occupational violence is a considerable problem in Australian urban general practice. Formal education programs in preventing and managing violence would be appropriate for GPs and doctors-in-training.

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mailed (with a single follow-up mail-out) to all 1085 members of three urban divisions of general practice in New South Wales in August and September 2004. The three divisions were chosen to provide a range of socioeconomic status (SES) demographics within Rural Remote and Metropolitan Areas (RRMA)¹³ classifications 1 and 2 (incorporating capital cities and other metropolitan centres). The questionnaire elicited demographic data on the GPs and their practice (including self-assessed levels of social disadvantage, drug- and alcohol-

related illness and psychiatric illness among their patients), experiences of violence, and education and training related to violence.

Levels of violence were classified as “high level” violence (physical abuse, sexual abuse, stalking, or sexual harassment) or “low level” violence (verbal abuse, property damage/theft, threats, or slander). Slander was defined as false and malicious accusations related to the GP’s professional role made by a patient or patient’s friend or family member.

Statistical analysis

The prevalence of the types and levels of violence experienced by GPs in the past 12 months were reported. Bivariate analyses using χ^2 tests or two-sample t tests were used to compare the distribution of demographic and practice-related factors in relation to the levels of violence experienced by

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GPs in the past 12 months. Multivariate polytomous logistic regression was used to compare GPs who had experienced low or high level violence in the past 12 months with those who had not. (Polytomous logistic regression is similar to logistic regression except that the dependent variable can take on more than two values.)

A parsimonious model was determined using a stepwise backward elimination method based on the likelihood-ratio test using a significance level of 0.05. All analyses were conducted using Stata version 8.2 software (Stata Corporation, College Station, Tex, USA).

Ethical approval

Our study was approved by the Human Research Ethics Committee of the University of Newcastle.

1 Characteristics of urban general practitioners in our sample compared with national estimates

Characteristic	Our sample (n = 528)	National statistics*
Sex		
Male	266 (50.4%)	10 831 (62.0%)
Female	262 (49.6%)	6 651 (38.0%)
Age (years)		
< 35	24 (4.5%)	1 533 (8.8%)
35–44	113 (21.4%)	4 851 (27.7%)
45–54	213 (40.3%)	5 532 (32.0%)
≥ 55	175 (33.1%)	5 566 (31.8%)
Not known	3 (0.6%)	

* Source: Australian Government Department of Health and Ageing general practitioner statistics 2003–2004. ◆

2 Number of general practitioners experiencing various types of violence in the previous 12 months (n = 528)*

Type of violence	Violence experienced	No violence experienced	Proportion of GPs experiencing violence (95% CI)
Verbal abuse	222	305	42.1% (37.8%–46.3%)
Property damage/theft	151	374	28.6% (24.7%–32.5%)
Threats	122	403	23.1% (19.5%–26.7%)
Slander	90	428	17.1% (13.8%–20.3%)
Sexual harassment	49	475	9.3% (6.8%–11.8%)
Stalking	16	509	3.0% (1.6%–4.5%)
Physical abuse	14	511	2.7% (1.3%–4.0%)
Sexual abuse	1	524	0.2% (0.0%–0.6%)

* Rows do not add up to 528 because some respondents did not answer all questions. ◆

RESULTS

A total of 528 replies was received (response rate 49%). Response rates for the individual divisions were 50% (high SES capital city division), 36% (low SES capital city division) and 54% (mixed SES non-capital city division). The mean age of respondents was 51.3 years (SD, 10.7 years), and 50% of respondents were women. (For comparison with national data see Box 1).

The majority (63.7%) of GPs surveyed had been subjected to some form of violence within the previous 12 months. The most common forms of violence were verbal abuse (42.1%), property damage or theft (28.6%), threats (23.1%), and slander (17.1%) (Box 2). Sixty-eight GPs (12.9%) experienced high level violence, while 263 GPs (49.8%) experienced only low level violence (Box 3).

Univariate analysis

Demographic and practice-related factors compared across the levels of violence experienced by GPs in the past 12 months are shown in Box 4. In terms of statistically significant GP demographic factors, GPs reporting high level violence were more likely to be female, to be younger in age, and to have less years of experience as a GP. In terms of statistically significant practice-related factors, GPs experiencing both low and high levels of violence were more likely to report having a higher than average number of patients who were socially disadvantaged and/or had mental-health or drug-related problems. In addition, GPs were more likely to experience violence if they worked longer hours per week, conducted home visits after hours, worked after hours in a cooperative clinic, or worked in the low SES division.

3 Frequency of the levels of violence experienced by general practitioners in the previous 12 months*

Violence level	Number of GPs	Proportion of GPs (95% CI)
None	196	37.1% (33.0%–41.2%)
Low level	263	49.8% (45.5%–54.1%)
High level	68	12.9% (10.0%–15.7%)

* One respondent did not answer any question relating to violence. ◆

Multivariate analysis

Multivariate polytomous logistic regression modelling was used to compare GPs who had experienced low or high level violence in the past 12 months with those who had not (Box 5). Comparison between the univariate and multivariate analyses did not reveal any evidence of confounding.

After multivariate analysis, GP demographic factors that remained significant were sex and number of years worked as a GP. Female GPs were more likely to experience both low and high level violence than males, while having more years' experience as a GP was associated with a reduction in both low and high level violence. For every 5 years worked as a GP, the decline in likelihood of experiencing violence was 0.9 (for low level violence) and 0.8 (for high level violence).

Practice-related factors that remained significantly associated with low level violence were having a higher than average proportion of patients with mental-health or drug-related problems, working after hours in a cooperative clinic and working 20–29 hours or ≥ 40 hours per week. Factors significantly associated with high level violence were working in a low SES division, having a higher than average proportion of patients with drug-related problems, working 20–29 hours or ≥ 40 hours per week, and making home visits during business hours.

The study participants were also questioned about workplace violence education or training. Most GPs (80%) had not received any education or training related to workplace violence. Of those who had received some form of training, 15% were prompted by a personal experience or an episode of violence in general practice. Sixty per cent of the GPs surveyed indicated that they would benefit from further education or training in managing violence.

4 Association of demographic and practice-related factors with proportion of general practitioners experiencing various levels of violence over the previous 12 months*†

Factor	Level of violence			P	Factor	Level of violence			P
	None (n = 196)	Low level (n = 263)	High level (n = 68)			None (n = 196)	Low level (n = 263)	High level (n = 68)	
Sex of GP				< 0.001	Proportion of patients with alcohol-related problems†				< 0.001
Female	45%	46%	75%		Less than other practices	42%	25%	40%	
Male	55%	54%	25%		Same as other practices	55%	67%	50%	
Country qualified				0.829	More than other practices	3%	8%	10%	
Australia	76%	76%	80%		Proportion of patients with drug-related problems†				
Overseas	24%	24%	20%		Less than other practices	69%	54%	53%	< 0.001
Main type of work				0.402	Same as other practices	28%	33%	32%	
Sole practitioner	22%	22%	17%		More than other practices	3%	13%	15%	
Partner	20%	25%	15%		Number of GPs in practice				0.913
Associate	27%	26%	36%		1	20%	18%	15%	
Assistant	19%	14%	16%		2	16%	15%	16%	
Other	12%	13%	16%		3–4	21%	24%	28%	
Billing practice				0.487	≥ 5	43%	43%	41%	
Totally private	6%	5%	10%		Hours worked per week				0.001
Totally bulk-billing	19%	19%	21%		< 20	23%	12%	13%	
Mixed private and bulk-billing	75%	76%	69%		20–29	13%	18%	28%	
Type of practice				0.841	30–39	32%	26%	21%	
Traditional	87%	89%	87%		≥ 40	32%	44%	38%	
Corporate	7%	7%	6%		Type of visit in which violence experienced				
Other	6%	4%	7%		Home visits during business hours	85%	88%	93%	0.268
Proportion of socially disadvantaged patients†				0.006	Home visits after hours	58%	69%	71%	0.033
Less than other practices	51%	37%	33%		Private surgery after hours	32%	42%	31%	0.050
Same as other practices	37%	41%	44%		Cooperative clinic after hours	26%	41%	18%	< 0.001
More than other practices	12%	22%	23%		Socioeconomic division				< 0.001
Proportion of patients with mental health problems†				< 0.001	High SES	55%	42%	43%	
Less than other practices	30%	11%	20%		Mixed SES	32%	46%	30%	
Same as other practices	62%	68%	65%		Low SES	13%	12%	27%	
More than other practices	8%	21%	15%		Mean age (SD) of GPs (years)	53.2 (11.9)	51.1 (10.5)	48.3 (10.8)	0.005
					Mean number of years (SD) working as a GP	25.0 (18.1)	22.4 (15.7)	17.2 (9.6)	0.003

* Figures represent proportion of GPs, except where otherwise specified. † Self-assessed comparison with other general practices.

DISCUSSION

To our knowledge, this is the first formal study of prevalence and characteristics of occupational violence in Australian urban general practice. Our finding that 63.7% of GPs had experienced at least one episode of violence over the previous 12 months can be compared with a 12-month prevalence of violence of 44% and 48%, respectively,

in previous UK³ and rural Australian¹¹ general practice studies. The high prevalence of verbal abuse and low (though still worrying) prevalence of stalking, physical abuse and sexual abuse were also in keeping with these and other previous studies.^{6,9,10} Slander directed at GPs was a relatively frequent occurrence. This form of violence has not been elicited in previous

studies, and the implications for GPs, whose role encompasses close attachments to (and respect within) their communities, may be significant.

Our results suggest that female GPs were more likely than males to experience high and low level violence, although after multivariate analysis significance persisted only for high level violence. This finding is in

5 Results of multivariate polytomous logistic regression analysis comparing general practitioners who experienced low or high level violence in the previous 12 months with those who did not experience violence

Factor	Low level violence compared with no violence OR (95% CI)	High level violence compared with no violence OR (95% CI)
<i>Division of general practice</i>		
Mixed SES	1.00	1.00
Low SES	0.95 (0.43–2.10)	2.86 (1.00–8.43)
High SES	0.81 (0.46–1.43)	0.79 (0.33–1.91)
<i>Sex of GP</i>		
Male	1.00	1.00
Female	1.27 (0.77–2.10)	5.87 (2.61–13.17)
<i>Proportion of patients with mental health problems*</i>		
Less than other practices	1.00	1.00
Same as other practices	2.68 (1.52–4.72)	0.99 (0.43–2.27)
More than other practices	4.49 (1.94–10.41)	0.97 (0.29–3.21)
<i>Proportion of patients with drug-related problems*</i>		
Less than other practices	1.00	1.00
Same as other practices	1.05 (0.65–1.71)	1.74 (0.82–3.70)
More than other practices	2.41 (0.88–6.61)	5.77 (1.56–21.30)
<i>Hours worked per week</i>		
< 20	1.00	1.00
20–29	3.24 (1.56–6.73)	4.59 (1.65–12.78)
30–39	1.74 (0.93–3.29)	1.31 (0.48–3.60)
≥ 40	3.37 (1.73–6.59)	6.26 (2.16–18.10)
<i>Home visits conducted during business hours</i>		
No	1.00	1.00
Yes	0.99 (0.53–1.85)	4.76 (1.49–14.29)
<i>Working after hours in a cooperative clinic</i>		
No	1.00	1.00
Yes	1.54 (0.87–2.70)	0.55 (0.21–1.39)
<i>Years worked as a GP</i>		
Each 5-year increment	0.91 (0.82–1.02)	0.77 (0.66–0.90)

OR = odds ratio, SES = socioeconomic status. * Self-assessed comparison with other general practices. ◆

contrast with a UK study³ showing that male GPs experienced a higher 12-month prevalence of violence than female GPs. In an Australian rural study,¹⁰ the 12-month prevalence of what we have characterised as “low level” violence was higher in male GPs, but “high level” violence was more common in female GPs. These discrepant findings may arise from the fact that both our study and the rural Australian study, unlike the UK study, specifically elicited sexual harassment as a form of violence.

In our study, the likelihood of having experienced violence during the previous 12

months declined with years of experience as a GP. Previous studies have not examined this aspect of general practice violence. It is possible that this finding may be attributable to the acquisition of greater interpersonal skills and patient-management techniques with longer experience as a GP, and the likely older age and greater stability of the experienced GPs’ patient demographic. Thus, the patients of experienced GPs are likely to be less prone to violence, and it is reasonable to expect such practitioners would have more expertise in “defusing” potentially violent situations.

We found that GPs who perceive their practice to include more patients with mental-health and drug-related problems experience more violence. This is in keeping with both quantitative and qualitative studies from the United Kingdom^{3-8,14,15} and Australia,^{10,11} which have found a significant role for psychiatric and drug-related illness in precipitating individual violent incidents in general practice.

Our study also found that GPs who rate their practice as having greater than average social disadvantage are, on univariate analysis, at greater risk of violence. This is consistent with previous research finding an association of verbal abuse of GP receptionists and practice deprivation score¹⁶ and with the qualitative perceptions of GPs.^{12,17} This effect was, however, no longer apparent on multivariate analysis (though the greater risk of violence in the division characterised as being of low SES persisted).

A factor to be considered here is the “clustering” of risk factors that dominated risk stratification assessments of violence by GPs in the earlier qualitative phase of our study. This suggests that social disadvantage may be a marker of mental-health or drug- and alcohol-related problems, which then precipitate episodes of violence. Similarly, “clustering” of risk factors examined in univariate analysis could be a factor in the association between mental-health problems and high level (though not low level) violence failing to persist on multivariate analysis.

To further elucidate the role of social disadvantage and mental health as independent risk factors, data on individual incidents of violence will need to be examined, rather than relying on summary assessments of practice profile and recall of violence by practitioners.

It is also difficult to interpret the greater experience of violence of GPs who do home visits or who work in after-hours cooperative clinics without examining where episodes of violence involving the individual GP occurred.

The perception from other studies that violence is more prevalent in larger practices¹⁸ was not supported by our findings, which were consistent with those of the qualitative phase of our study.¹²

A strength of our study was the use of multivariate analysis to allow a more refined examination of the nature of general practice violence than previous studies, which have employed univariate analysis only.

A limitation of our study was the fairly low response rate, especially from GPs in the

low SES division. The overall response rate of 49%, while not high, is comparable with that of previous studies (range, 30%–80%; median, 61%)^{3,5-8,10,11} Though conducted in only three urban divisions of general practice, these divisions were chosen to be broadly representative of Australian urban general practice demographics. Nevertheless, the demographics of the GPs in the study compared with national statistics (being somewhat older and with a higher proportion of males) should be considered in generalising our results. Furthermore, the poorer response rate in the low SES division, together with the finding of greater likelihood of experiencing violence in the low SES division, suggests our study may have underestimated the prevalence of violence overall.

Other limitations of our study, in common with previous studies, were the self-assessment by GPs of the demographic profile of their practices and the possible recall bias inherent in retrospective collection of data on such an emotive topic. Prospective studies with contemporaneous reporting of occurrence and characteristics of episodes of violence are much needed.

Nevertheless, our results have established that occupational violence is a significant problem in Australian urban general practice. Given our finding that women are more likely to experience high levels of violence, and in view of the increasing number of women in Australian general practice,¹⁹ violence is likely to be an increasing problem.

In spite of the occupational health and health-service delivery implications of violence against GPs, it is noteworthy that Australia has no systematic response to occupational violence in general practice, unlike the “zero tolerance” approach promoted by the UK National Health Service.¹⁷

Lastly, given the frequency of violence directed towards GPs, the restrictions of

practice in response to violence and the implications these have for access to primary health care,^{12,20} it is somewhat disturbing that 80% of GPs had not had any education or training in dealing with workplace violence. Giving GPs formal education and training in dealing with violence is thus of some urgency, and our results provide an evidence base for such programs. An implication of the finding that violence is more likely for less experienced GPs may be that medical students and general practice registrars should be the primary target for education in violence prevention and management.

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COMPETING INTERESTS

None identified.

REFERENCES

- 1 Wright NM, Dixon CA, Tompkins CN. Managing violence in primary care: an evidence-based approach. *Br J Gen Pract* 2003; 53: 557-562.
- 2 Clode D. The conspiracy of silence: emotional health among medical practitioners. Melbourne: Royal Australian College of General Practitioners, 2004.
- 3 Health and Policy Economic Research Unit, British Medical Association. Violence at work: the experience of GPs in Northern Ireland. London: British Medical Association, 2003. Available at: [http://www.bma.org.uk/ap.nsf/Content/violenceNI/\\$file/ViolenceNI.pdf](http://www.bma.org.uk/ap.nsf/Content/violenceNI/$file/ViolenceNI.pdf) (accessed Sep 2005).
- 4 General practitioners — violence against general practitioners and their staff. London: British Medical Association, 2003.
- 5 Hobbs FD. Violence in general practice: a survey of general practitioners' views. *BMJ* 1991; 302: 329-332.
- 6 Elston MA, Gabe G, Denney D, et al. Violence against doctors: a medical(ised) problem? The

- case of National Health Service general practitioners. *Sociol Health Illn* 2002; 24: 575-598.
- 7 Myerson S. Violence to general practitioners and fear of violence. *Fam Pract* 1991; 8: 145-147.
 - 8 D'Urso P, Hobbs R. Aggression and the general practitioner. *BMJ* 1989; 298: 97-98.
 - 9 Tolhurst H, Talbot J, Baker L, et al. Rural general practitioner apprehension about work related violence in Australia. *Aust J Rural Health* 2003; 11: 237-241.
 - 10 Tolhurst H, Baker L, Murray G, et al. Rural general practitioner experience of work-related violence in Australia. *Aust J Rural Health* 2003; 11: 231-236.
 - 11 Alexander C, Fraser J. Occupational violence in an Australian healthcare setting: implications for managers. *J Healthc Manag* 2004; 49: 377-392.
 - 12 Magin P, Adams J, Ireland M, et al. After hours care: a qualitative study of GPs' perceptions of risk of violence and effect on service provision. *Aust Fam Physician* 2005; 34: 91-92.
 - 13 Department of Primary Industries and Department of Human Services and Health. Rural, Remote and Metropolitan Areas Classification. Canberra: AGPS, 1994.
 - 14 Thompson J. Difficult behaviour in drug-misusing and non-drug-misusing patients in general practice — a comparison. *Br J Gen Pract* 2001; 51: 391-393.
 - 15 Neville RG. Violent patients in general practice. *Practitioner* 1986; 230: 1105-1108.
 - 16 Dixon CA, Tompkins CN, Allgar VL, Wright NM. Abusive behaviour experienced by primary care receptionists: a cross-sectional survey. *Fam Pract* 2004; 21: 137-139.
 - 17 We don't have to take this. Managing violence in mental health. Resource sheet update. UK Department of Health, 2002. Available at: <http://www.nhs.uk/zerotolerance/mental> (accessed Sep 2005).
 - 18 Naish J, Carter YH, Gray RW, et al. Brief encounters of aggression and violence in primary care: a team approach to coping strategies. *Fam Pract* 2002; 19: 504-510.
 - 19 Sims G, Bolton P. The supply and distribution of general practitioners. In: *General practice in Australia: 2004*. Canberra: Australian Government Department of Health and Ageing, 2005.
 - 20 Hobbs FD. General practitioners' changes to practice due to aggression at work. *Fam Pract* 1994; 11: 75-79.

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