

A national study of workplace aggression in Australian clinical medical practice

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Workplace aggression is a worldwide concern that has been linked to impaired physical and mental health.^{1–4} There is limited international research describing the extent and impact of workplace aggression in medicine, however, and the few Australian studies have primarily focused on general practitioner experiences of patient aggression.^{5–8} There are no comprehensive data on workplace aggression in Australia, and workplace aggression is considered to be grossly underreported by health workers.^{9,10} In the absence of comprehensive data, legislators and policy-makers have to rely on anecdote, opinion, ideology or poor-quality evidence, where it exists, to inform decision making.¹¹ Currently, the research literature appears to be the most reliable source of data on workplace aggression in Australia.

This article describes results from the first national study of workplace aggression experienced by the major subpopulations of clinical medical practitioners in Australia. The study aimed to determine the 12-month prevalence of verbal or written aggression and physical aggression from patients, patients' relatives or carers, coworkers and others external to the workplace. Differences in prevalence by sex, age, postgraduate experience and international medical graduate (IMG) status were also examined.

Methods

This exploratory–descriptive study was conducted between March 2010 and June 2011, in the third wave of the Medicine in Australia: Balancing Employment and Life (MABEL) survey. Eight workplace aggression prevalence items were included in questionnaires tailored for GPs and

Abstract

Objective: To describe the 12-month prevalence of verbal or written and physical aggression from patients, patients' relatives or carers, coworkers and others in Australian clinical medical practice.

Design, setting and participants: An exploratory, descriptive study of cross-sectional survey design in the third wave (March 2010 to June 2011) of the Medicine in Australia: Balancing Employment and Life longitudinal survey.

Main outcome measures: Proportions of clinicians reporting verbal or written and physical aggression from each aggression source and the significance of differences reported by doctor type, sex, international medical graduate status, age and postgraduate experience.

Results: Of 16 327 medical practitioners sampled, a response rate of 60.9% (9951) was achieved and 9449 (57.9%) were in Australian clinical practice. Participants comprised 3515 general practitioners and GP registrars, 3875 specialists, 1171 hospital non-specialists and 888 specialists in training. Overall, 70.6% of medical practitioners experienced verbal or written aggression and 32.3% experienced physical aggression from one or more sources in the previous 12 months. While patterns of exposure were complex, more female clinicians, international medical graduates (IMGs) and hospital-based clinicians experienced workplace aggression. Age and postgraduate experience were significantly negatively associated with aggression exposure.

Conclusions: This is the first nationwide study of workplace aggression from all sources experienced by all subpopulations of Australian medical clinicians. The findings suggest particular risks for younger and more junior hospital-based clinicians, and for IMGs in general practice. A failure to address this important professional and public health concern may contribute to ongoing challenges in the recruitment and retention of medical practitioners in an era of increasing shortages internationally.

GP registrars, specialists, hospital non-specialists and specialists in training. Questionnaire items were tested in the pilot phase of the survey.¹² The sampling frame was the Medical Directory of Australia (MDA), a comprehensive database of 59 144 Australian medical practitioners,¹³ as accessed in February and May 2010. Of these, 16 327 (27.6%) were surveyed in accordance with the MABEL protocol.¹⁴ Invitees comprised contactable respondents from previous waves of the MABEL survey (12 068) and clinical medical practitioners new to or re-entering the MDA by May 2010 (4259). The study was approved by the University of Melbourne Faculty of Economics and Commerce Human Ethics Advisory Group and the Monash University Standing Committee on Ethics in Research Involving Humans.

Variables used

A range of demographic and other profile data were collected, including doctor type, sex, age, IMG status, and location by state and Australian Standard Geographic Classification of remoteness.¹⁵ Years elapsed since medical graduation was also determined. Estimates of the frequency of aggression from patients, patients' relatives or carers, coworkers and others external to the workplace were elicited with a five-point, ordinal response scale: "Frequently (once or more each week)", "Often (a few times each month)", "Occasionally (a few times each 6 months)", "Infrequently (a few times in 12 months)" and "Not at all". Workplace aggression was defined in survey questionnaires as:

any workplace aggression directed toward you in the last 12

months while you were working in medicine (ie, any circumstance or location in which you performed your role as a medical practitioner), including:

Verbal or written abuse, threats, intimidation or harassment — such as ridicule, abusive emails, racism, bullying, contemptuous treatment and non-physical threats or intimidation.

Physical threats, intimidation, harassment or violence — such as a raised hand or object, unwanted touching, damage to property and sexual or other physical assault.

Statistical analyses

The profile of respondents (doctor type, sex, age, state and rurality) was compared with the 2010 profile of MDA clinicians. Sampling bias was assessed with the Pearson χ^2 test of independence for categorical variables (doctor type, sex, state and rurality) and the independent *t* test for age. Aggression prevalence data were summarised by percentages. Summary rates of verbal or written aggression and physical aggression were indicated with binomial (Clopper–Pearson) confidence intervals. The statistical significance of differences in distributions of reported aggression by doctor type, sex and IMG status was determined with the Kruskal–Wallis test (corrected for tied ranks). The statistical significance of associations between age, years elapsed since graduation and aggression prevalence was determined with Spearman rank correlation.

Results

A response rate of 60.9% (9951) was achieved, with 57.9% (9449) of invitees indicating that they worked in clinical practice in Australia. Comparisons of the study sample and national profiles are shown in Box 1 (doctor type, State and rurality) and Box 2 (sex and mean age, by doctor type). While statistically significant ($P < 0.001$), except for mean age for male hospital non-specialists, the differences between the sample and the national profiles suggest only a slight bias toward specialist, Victorian, non-metropolitan, female and younger clinicians.

Overall, 70.6% (95% CI, 69.7%–71.5%) of clinicians reported experi-

encing verbal or written aggression, and 32.3% (95% CI, 31.3%–33.3%) reported experiencing physical aggression from one or more sources in the previous 12 months. As shown in Box 3, exposure levels varied by source, form and doctor type. There were statistically significant differences ($P < 0.01$) between aggression prevalence from each source reported by doctor type. Verbal aggression from each source was reported by up to one-and-a-half times the proportion of hospital non-specialists and specialists in training compared with GPs and specialists, and up to two times for physical aggression from each source.

Differences by clinicians' sex were also identified (Box 4). Overall, 69.1% (95% CI, 67.9%–70.4%) of male clinicians reported experiencing verbal or written aggression in the previous 12 months from one or more sources compared with 72.6% (95% CI, 71.1%–73.9%) of female clinicians, while 31.2% (95% CI, 30.0%–32.5%) of male clinicians reported experiencing physical aggression in the previous 12 months from one or more sources compared with 33.8% (95% CI, 32.3%–35.3%) of female clinicians. The differences, however, were unevenly spread across aggression sources for each doctor type (Box 4).

The distribution of aggression prevalence for IMGs differed from that of Australian medical school graduates (non-IMGs) for some sources and forms of aggression. This was especially so for GPs and GP registrars in relation to verbal or written aggression from patients (IMGs, 63.1% v non-IMGs, 52.3%; $P < 0.001$), and physical aggression from patients' relatives or carers (14.8% v 11.8%; $P < 0.05$), coworkers (5.7% v 3.9%; $P < 0.05$) and others external to the workplace (8.8% v 6.6%; $P < 0.05$). In contrast, fewer IMG than non-IMG hospital non-specialists reported experiencing physical aggression from patients (36.6% v 49.0%; $P < 0.05$) once or more in the previous 12 months.

Age and years since graduation were strongly correlated ($\rho = 0.968$; $P < 0.001$) across all doctor types. Both variables, almost identically, were negatively though weakly associated with the reported frequency of workplace aggression from each source in the previous 12 months (Box 5). This

1 Profile of survey respondents compared with national profile, by doctor type, state and rurality, March 2010 – June 2011

Category*	No. of respondents (%)	
	Wave 3 MABEL survey	MDA
Doctor type	9449	59 144
GP and GP registrar	3515 (37.2%)	23 298 (39.4%)
Specialist	3875 (41.0%)	21 131 (35.7%)
Hospital non-specialist	1171 (12.4%)	9669 (16.4%)
Specialist in training	888 (9.4%)	5046 (8.5%)
State	9449	59 144
ACT	177 (1.9%)	1043 (1.8%)
NSW	2550 (27.0%)	19 315 (32.7%)
NT	102 (1.1%)	382 (0.7%)
Qld	1707 (18.1%)	10 747 (18.2%)
SA	748 (7.9%)	4516 (7.6%)
Tas	309 (3.3%)	1728 (2.9%)
Vic	2882 (30.5%)	15 923 (26.9%)
WA	974 (10.3%)	5490 (9.3%)
Rurality	9399	59 144
Major city	7142 (76.0%)	48 039 (81.2%)
Inner regional	1493 (15.9%)	8012 (13.6%)
Outer regional	542 (5.8%)	2632 (4.5%)
Remote	161 (1.7%)	357 (0.6%)
Very remote	61 (0.7%)	104 (0.2%)

MABEL = Medicine in Australia: Balancing Employment and Life. MDA = Medical Directory of Australia, accessed May 2010.¹³ GP = general practitioner. ACT = Australian Capital Territory. NSW = New South Wales. NT = Northern Territory. Qld = Queensland. SA = South Australia. Tas = Tasmania. Vic = Victoria. WA = Western Australia. * $P < 0.001$ for categories (not subcategories). ◆

pattern was replicated for individual doctor types, but the statistical significance of associations disappeared for hospital non-specialists and specialists in training.

Discussion

This national study of workplace aggression in Australian clinical medical practice demonstrates that, for many doctors, workplace aggression is inherent in clinical practice. Extrapolated to the population level, the study results suggest that about 38 000 medical clinicians would have experienced one or more episodes of verbal or written aggression and about 18 000 would have experienced one or more episodes of physical aggression in 12 months. While many clinicians reported aggression as infrequent (a few times in 12 months), more frequent incidents were reported by 15%–44% of clinicians experiencing written or verbal aggression and 11%–32% experiencing physical aggression.

2 Profile of survey respondents compared with national profile (age and sex), by doctor type, March 2010 – June 2011

Doctor type and sex*	Wave 3 MABEL survey			MDA		
	No.	Proportion	Mean age, years (SD)	No.	Proportion	Mean age, years (SD)
GP and GP registrar	3514			23 279		
Men		51.6%	52.9 (11.5)		60.7%	55.0 (11.1)
Women		48.4%	46.3 (9.9)		39.3%	49.1 (10.0)
Specialist	3867			21 123		
Men		69.1%	52.4 (10.7)		77.8%	54.5 (11.0)
Women		30.9%	46.8 (8.8)		22.2%	48.9 (9.5)
Hospital non-specialist	1170			9644		
Men		42.1%	33.4 (10.4)		51.2%	34.1 (8.5)
Women		58.0%	30.4 (7.5)		48.8%	32.1 (7.5)
Specialist in training	887			5037		
Men		47.6%	34.0 (5.9)		58.5%	37.2 (6.5)
Women		52.4%	33.5 (6.2)		41.5%	36.5 (6.6)
Total	9438			59 083		
Men		57.2%	49.4 (12.8)		65.0%	51.3 (12.9)
Women		42.8%	42.3 (11.1)		35.0%	44.1 (11.7)

MABEL = Medicine in Australia: Balancing Employment and Life. MDA = Medical Directory of Australia, accessed May 2010.¹³ GP = general practitioner. *P < 0.001 for all subcategories except male hospital non-specialist, which was not significant. ◆

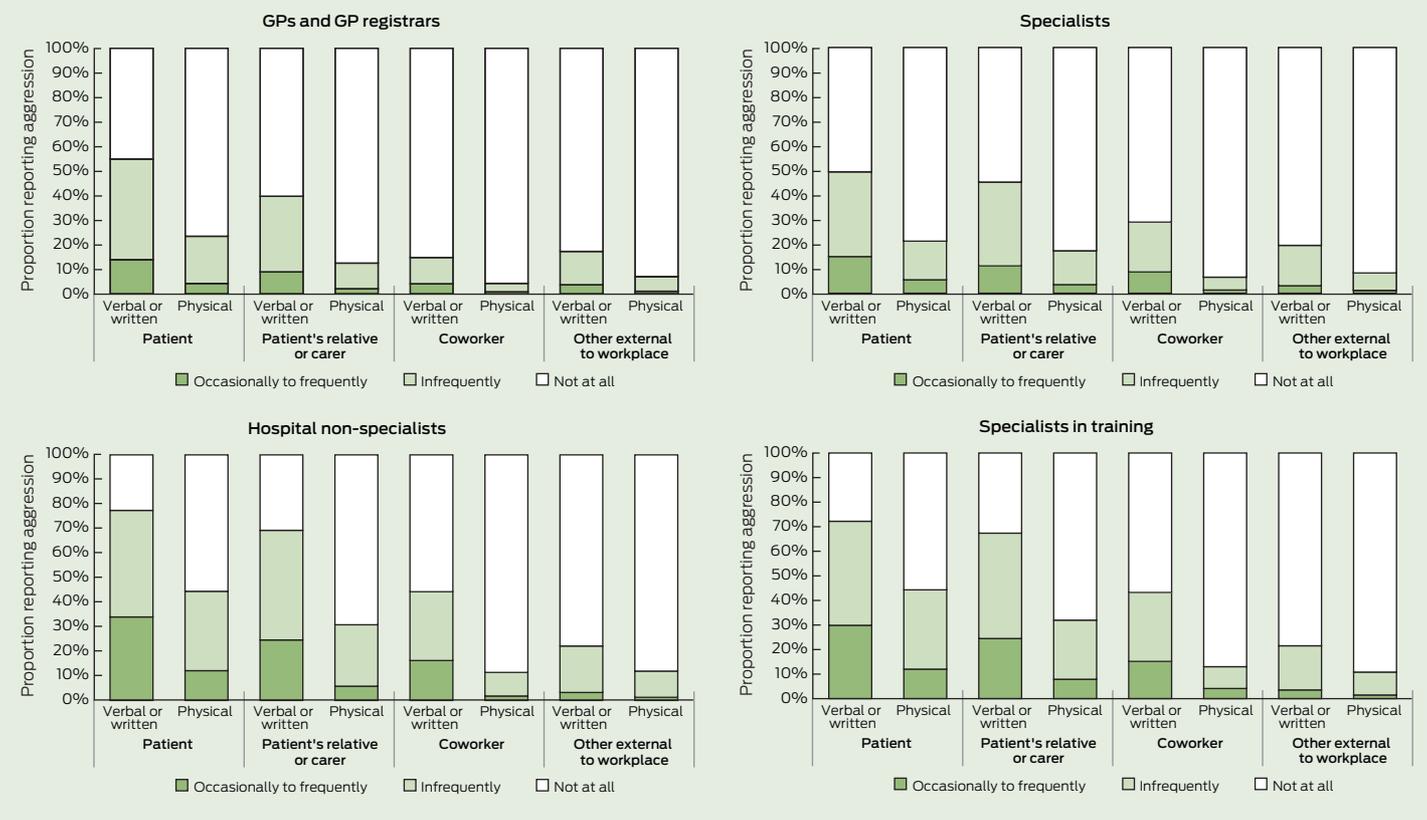
There are few comparable studies on workplace aggression in clinical medical practice, not only in relation to the scale and scope of the research, but also because of differences in def-

initions, terminologies and recall periods employed by researchers. Nevertheless, consistent with the broader health care literature,^{4,16-19} patients were the most common

source of aggression, followed by aggression from patients' relatives or carers, and prevalence rates for non-physical aggression were generally one-and-a-half to four times that for physical aggression. For GPs and GP registrars, the prevalence of verbal aggression from patients (54.9%) was consistent with outcomes from previous Australian research (42%–58%), but the prevalence of physical aggression was much higher (23.4% v 2%–6%).⁵⁻⁸ Coworkers were the third most common source of aggression overall. Prevalence rates for coworker verbal aggression (14.8%–44.3%) and physical aggression (4.3%–13.0%) were much higher than for United Kingdom clinicians, where less than 5% experienced verbal aggression and less than 1% experienced physical aggression from coworkers in the previous 12 months.^{20,21}

Of particular importance is the finding that workplace aggression prevalence for the primarily hospital-based, younger and less experienced hospital non-specialists and specialists in training was up to twice that for GPs or specialists. Other studies sug-

3 Proportions of medical practitioners reporting workplace aggression within the previous 12 months, by doctor type and source of aggression, March 2010 – June 2011 (n = 9449)



gest that hospital-based medical work is a greater risk for workplace aggression than community-based practice,^{7,22,23} no doubt related to higher levels of patient acuity, stress and distress. Other research evidence supports the contention that younger and less experienced medical practitioners are at higher risk of workplace aggression than older and more experienced clinicians.^{5,8,24}

Hospital non-specialists and specialists in training are about 15 to 25 years younger and comprise relatively more female clinicians compared with specialists. They are more likely to be afforded lower status in "a pecking order of seniority".²⁵ They are also likely to be less skilled or experienced in aggression minimisation and de-escalation, particularly where the perpetrators are more senior personnel or clinical colleagues. Clearly, greater institutional efforts are required to enhance the aggression minimisation skills of doctors who are new to clinical practice, and to reduce both the prevalence and impact of workplace aggression.

With the exception of coworker aggression, female GPs experienced significantly less aggression from all other sources than male clinicians. This contrasts with other studies showing that female GPs experienced more bullying, gender-based or sexual aggression.⁵⁻⁸ In addition, all female clinicians experienced lower rates of aggression from others external to the workplace. This suggests that, where non-clinically or non-professionally related aggression arises in the workplace, male clinicians are more often the target of, or more often at the forefront of dealing with, such incidents. The finding that more female than male specialists in training report verbal or written and physical aggression from patients and verbal or written aggression from patients' relatives

4 Proportions of medical practitioners reporting workplace aggression within the previous 12 months, by doctor type, form of aggression, doctor's sex and source of aggression, March 2010 – June 2011 (n = 9449)

Doctor type	Form of aggression	Doctor sex	Source of aggression (%)*			
			Patient	Patient's relative or carer	Coworker	Other external to workplace
GP and GP registrar	Verbal or written	Men	57.1% [†]	43.1% [†]	14.4%	19.5% [†]
		Women	52.6%	36.1%	15.3%	15.0%
	Physical	Men	24.8% [‡]	14.5% [†]	4.8%	8.2% [‡]
		Women	20.4%	10.5%	3.7%	5.8%
Specialist	Verbal or written	Men	48.3%	43.8% [§]	27.6% [‡]	20.5% [§]
		Women	51.9%	48.5%	31.8%	17.5%
	Physical	Men	22.0%	17.0%	6.2%	9.0% [§]
		Women	25.2%	18.2%	7.3%	6.8%
Hospital non-specialist	Verbal or written	Men	79.3%	69.2%	43.0%	26.9% [†]
		Women	76.2%	69.5%	45.3%	18.8%
	Physical	Men	49.0%	33.9%	15.1% [‡]	15.7% [†]
		Women	46.7%	28.7%	8.9%	9.3%
Specialist in training	Verbal or written	Men	71.3% [§]	63.7% [‡]	41.8%	23.6%
		Women	72.9%	70.6%	44.4%	19.7%
	Physical	Men	37.6% [§]	28.6%	13.5%	13.3% [§]
		Women	44.4%	35.1%	12.6%	8.5%

GP = general practitioner. *Aggregated percentages of reported aggression experienced infrequently, occasionally, often and frequently. [†] $P < 0.001$ (Kruskal–Wallis test for ordinal distributions, corrected for tied ranks). [‡] $P < 0.01$ (Kruskal–Wallis test for ordinal distributions, corrected for tied ranks). [§] $P < 0.05$ (Kruskal–Wallis test for ordinal distributions, corrected for tied ranks). ♦

or carers suggests a particular risk for junior female clinicians.

IMGs in general practice appear more vulnerable to workplace aggression. While previous Australian qualitative research suggests that some individual cultural and communication issues may serve as triggers for aggression,²⁶ overall there has been a lack of research investigating IMG experiences of workplace aggression. More research is clearly warranted, since IMGs have an important role in efforts to ensure Australia has sufficient medical practitioners to maintain medical care in non-metropolitan communities and areas of workforce shortages.

The importance of workplace aggression in medicine cannot be underestimated. Beyond individual physical and mental health effects,¹⁻⁴ there is evidence of the greater impact

of the more prevalent non-physical forms of aggression on work participation decisions.¹⁸ Doctors exposed to workplace aggression have reported a loss of confidence or enthusiasm for treating patients^{20,21} and increased medical errors.²⁷ A failure to reduce the prevalence and impact of workplace aggression, especially for younger clinicians and IMGs, may also contribute to ongoing challenges in the recruitment and retention of medical practitioners in this era of increasing workforce shortages internationally.²⁸

There are some limitations to this study. Sampling biases may have contributed to the prevalence of workplace aggression being slightly overestimated for non-metropolitan, specialist and female clinicians, and slightly underestimated for hospital non-specialists. However, self-selection

5 Association between medical practitioner age, years since graduation and frequency of workplace aggression within the previous 12 months, by source of aggression, March 2010 – June 2011*

Variable	Patient		Patient's relative or carer		Coworker		Other external to workplace	
	Verbal or written	Physical	Verbal or written	Physical	Verbal or written	Physical	Verbal or written	Physical
Age	-0.237	-0.193	-0.224	-0.168	-0.182	-0.091	-0.057	-0.067
Years since graduation	-0.239	-0.199	-0.224	-0.168	-0.189	-0.098	-0.060	-0.069

* Spearman rank correlation coefficient; $P < 0.001$. ♦

bias by those who had experienced aggression was minimised, as aggression items were a small component of the questionnaires. Although a definition of workplace aggression was provided, responses were subject to clinicians' own perceptions of experiencing aggression from each source. Recall bias was minimised, as questionnaire items elicited estimates of exposure in a range, rather than exact frequencies. Finally, more complex interrelationships between variables, and the assessment of impact and causality, were not investigated in this study.

The results of this national cross-sectional study of Australian medical clinicians indicate that workplace aggression in medicine is a significant professional, occupational safety and public health issue. The outcomes provide important baseline data and an impetus for ongoing research into this phenomenon in clinical medicine, both in Australia and internationally. The research also provides an important body of evidence for legislators, policymakers, health services and the medical profession in developing strategies that may more effectively prevent and minimise workplace aggression in medical practice settings.

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