

Associations between Australian clinical medical practitioner exposure to workplace aggression and workforce participation intentions

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Abstract

Objective. The aim of the present study was to determine the association between clinician exposure to workplace aggression from any source in the previous 12 months and workforce participation intentions.

Methods. A cross-sectional survey, in the third wave of the Medicine in Australia: Balancing Employment and Life (MABEL) study, was conducted between March 2010 and June 2011. Respondents were a representative sample of 9449 Australian general practitioners (GPs) and GP registrars ($n=3515$), specialists ($n=3875$), hospital non-specialists ($n=1171$) and specialists in training ($n=888$). Associations between aggression exposure and workforce participation intentions were determined using logistic regression modelling.

Results. In adjusted models, aggression exposure was positively associated with a greater likelihood of intending to reduce clinical workload in the next 5 years (odds ratio (OR) = 1.15, 95% confidence interval (CI) 1.02–1.29) and intending to leave patient care within 5 years (OR = 1.20, 95% CI 1.07–1.35). When also accounting for well being factors, aggression exposure remained positively associated with intending to leave patient care within 5 years (OR = 1.13, 95% CI 1.00–1.27).

Conclusions. Exposure to workplace aggression presents a risk to the retention of medical practitioners in clinical practice and a potential risk to community access to quality medical care. More concerted efforts in preventing and minimising workplace aggression in clinical medical practice are required.

What is known about the topic? Very few studies have addressed the impact of workplace aggression on workforce participation intentions of medical practitioners.

What does this paper add? This paper provides evidence that exposure to workplace aggression from any source is associated with intentions to reduce clinical workload or leave patient care.

What are the implications for practitioners? There is a need to prevent or minimise the risk of exposure to workplace aggression from any source because the impacts may extend beyond the known psychological or physical effects to practitioner decisions about ongoing participation in the provision of clinical services.

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Introduction

Workplace aggression, exposure to verbal, written and physical abuse, threats and harm while undertaking work duties, is recognised as a major concern in health care work.^{1–3} It is prevalent in Australian clinical medical practice, with up to 71% and 32% of clinicians reporting experiencing non-physical and physical forms of workplace aggression, respectively, over a 12-month period.^{4–6} It is most prevalent among younger and primarily hospital-based clinicians,⁴ and is associated with clinicians who have a greater external control orientation, and who experience more challenging work conditions and patient concerns.⁷ Exposure to workplace aggression has also been found to be associated with lower intrinsic job satisfaction, satisfaction with life and self-rated health.⁸

A limited number of studies have investigated the effect of workplace aggression on clinician decisions about workforce participation. For nurses, workplace aggression has been associated with work restrictions, modifications or transfers, taking leave of absence and turnover,⁹ whereas in one UK study up to 10% of medical practitioners considered changing career as a result of experiencing workplace aggression.¹⁰ In Australian general practice, workplace aggression was perceived as having a major impact on staff retention, staff shortages and, in the long run, reduced services to local communities.¹¹ Meanwhile, a recent Finnish study of medical practitioners¹² found that turnover intentions were associated with violence and bullying. The aim of the present study was to determine the extent to which workplace aggression is associated with workforce participation

intentions in a large sample of medical practitioners providing clinical services in range of settings in Australia.

Methods

The present cross-sectional study of workplace aggression in Australian clinical medical practice was a component of the third wave of the annual Medicine in Australia: Balancing Employment and Life (MABEL) survey, which was conducted from March 2010 through to June 2011.^{4,7,8,13} The MABEL study was established to investigate the patterns and determinants of medical workforce participation in Australia. In all, 16 327 (27.6%) medical practitioners were sampled from the Medical Directory of Australia (MDA) and comprised 12 068 contactable respondents from previous waves of the MABEL survey, as well as 4259 clinical medical practitioners who were new to or had re-entered the MDA by May 2010.^{7,8} The MABEL study protocol was approved by the University of Melbourne Faculty of Business and Economics Human Ethics Advisory Group and the Monash University Standing Committee on Ethics in Research Involving Humans.

Variables used

Each of the MABEL questionnaires was tailored for one of the four Australian clinical 'doctor types' (general practitioners (GPs) and GP registrars, specialists, specialists in training and hospital non-specialists); however, there were many common items. Demographic and other profile variables included gender, age, international medical graduate (IMG) status and location by State and Australian Standard Geographic Classification (ASGC) of remoteness.¹⁴ Mastery (personal control orientation), defined as 'the extent to which one regards one's life-chances as being under one's own control in contrast to being fatalistically ruled',¹⁵ was measured with a revalidated version of the Pearlin Mastery Scale, summed to a score from 1 to 7 on a continuous scale, with higher scores indicating greater external control orientation.⁷

Workplace aggression was defined in the MABEL questionnaires as:

...any workplace aggression directed towards you in the last 12 months whilst you were working in medicine (i.e. 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 email, 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.⁴

The frequencies of verbal or written and physical aggression experienced from patients, patients' relatives or carers, coworkers and others external to the workplace in the previous 12 months were estimated with ordinal response scales. These comprised the five response options of 'Frequently (once or more each week)', 'Often (a few times each month)', 'Occasionally (a few times each six months)', 'Infrequently

(a few times in 12 months)' and 'Not at all'. The aggression prevalence variables were transformed into binary variables (0 = No, 1 = Yes), indicating whether or not respondents had experienced workplace aggression from any source in the previous 12 months, because most clinicians reported experiencing aggression 'Infrequently (a few times in 12 months)' or 'Not at all'.⁴

Items already found to be associated with workplace aggression exposure in the previous 12 months, which related to work hours, conditions and resources and perceived patient population characteristics,⁷ as well as intrinsic job satisfaction, self-rated health and satisfaction with life,⁸ were included in the study. Variables included the extent to which respondents agreed or disagreed with four work and patient items ('I have a poor support network of other doctors like me', 'It is difficult to take time off when I want to', 'My patients have unrealistic expectations about how I can help them', 'The majority of my patients have complex health and social problems') on a five-point ordinal-response scale (0 = Strongly Disagree, 1 = Disagree, 2 = Neutral, 3 = Agree, 4 = Strongly Agree). Each item was subsequently dichotomised about the median to facilitate analyses and the interpretation of results. Items requesting self-reported hours worked in the most recent usual week, excluding on-call work, and hours worked in the most recent usual week in 10 practice setting categories were used to calculate imputed 'total hours worked' and researcher-developed variables for total hours in the most recent usual week in 'public and non-government organisation (NGO) sector work', 'private sector work' and 'residential and aged care sector work'. A small number of outliers reporting greater than 120 h per week were excluded from analyses.⁷

Intrinsic job satisfaction was measured from 0 to 4 on a continuous scale with a revalidated instrument,⁸ which had been adapted from a 16-item Job Satisfaction Scale.¹⁶ Self-rated health status was measured by asking respondents, 'In general, would you say your health is: 'Excellent' (0), 'Very good' (1), 'Good' (2), 'Fair' (3) or 'Poor' (4)'?'; the scores were subsequently reverse coded.⁸ Respondents were also asked to respond to the question, 'All things considered, how satisfied are you with your life in general?' on a 10-point integer scale with bipolar anchor points (1 = 'Very dissatisfied', 10 = 'Very satisfied').⁸ In univariate analyses, each was found to be associated with the workforce participation intention variables in complex patterns across doctor types.

Statistical analyses

The respondent profile was compared with the 2010 MDA clinician profile using the Kruskal–Wallis equality of populations rank test (corrected for tied ranks) for categorical variables (doctor type, gender, state and ASGC location) and the independent *t*-test for mean age.⁴ The three outcome variables were dichotomised about the median for the likelihood to 'reduce clinical workload in the next 5 years' (Yes = 'Likely or very likely', No = 'neutral, unlikely or very unlikely'), 'leave patient care within 5 years' (Yes = 'Likely, very likely, neutral or unlikely', No = 'very unlikely') and 'leave medicine entirely within 5 years' (Yes = 'Likely, very likely, neutral or unlikely', No = 'very unlikely').

Logistic regression modelling was performed for each of the workforce participation intention variables to identify associations with any workplace aggression exposure. Modelling was undertaken with the exposure to workplace aggression variable, adjusting for the profile variables only (Model 1) and further adjusting for work hours, conditions and resources, as well as patient characteristics variables (Model 2). Finally, the intrinsic job satisfaction, self-rated health and satisfaction with life variables were entered into the model (Model 3). All statistical analyses were conducted using Stata version 11 (StataCorp LP, College Station, TX, USA).

Results

A response rate of 60.9% (9951) was achieved, with 57.9% (9449) of those sampled indicating that they worked in clinical practice settings in Australia. Respondents were found to be broadly representative of the Australian clinical medical workforce in relation to doctor type, gender, age, state and ASGC location.⁴ Respondent profile data, as reported previously,^{4,7,8,13} are summarised in Table 1. Respondent age ranged from 23 to 91 years ($n = 9345$; mean age 46.4 years, 95% confidence interval (CI) 46.1–46.6 years). Mastery scores ranged from 1 to 7 ($n = 9145$; mean score 2.55, 95% CI 2.53–2.58). Binary predictor and outcome variable data are summarised in Table 2. Of note, 71.5% (6491) of medical practitioners reported experiencing workplace aggression in the previous 12 months and 43.1% indicated they were likely or very likely to reduce their clinical workload in the next 5 years. Hours worked in the most recent

Table 1. Respondent profile variables

GPs, general practitioners; ACT, Australian Capital Territory; ASGC, Australian Standard Geographic Classification

	<i>n</i>	% ^A
Doctor type	9449	
GPs and GP registrars	3515	37.2
Specialists	3875	41.0
Hospital non-specialists	1171	12.4
Specialists in training	888	9.4
Gender	9438	
Female	4040	42.8
State	9449	
ACT	177	1.9
New South Wales	2550	27.0
Northern Territory	102	1.1
Queensland	1707	18.1
South Australia	748	7.9
Tasmania	309	3.3
Victoria	2882	30.5
Western Australia	974	10.3
ASGC of remoteness	9399	
Major city	7142	76.0
Inner regional	1493	15.9
Outer regional	542	5.8
Remote/very remote	222	2.4
International medical graduate	9389	
Yes	1878	20.0

^ASubject to rounding error.

usual week, overall and in different service sectors are summarised in Table 3.

In logistic regression modelling, for both Model 1 (Table 4), adjusting for the clinician profile variables only, and Model 2 (Table 5), further adjusting for work hours, conditions and resources, as well as patient characteristics variables, exposure to workplace aggression in the previous 12 months was associated with being more likely to reduce clinical workload in the next 5 years (Model 1, OR 1.29, 95% CI 1.16–1.44; Model 2, OR 1.15, 95% CI 1.07–1.35) and to leave patient care within 5 years (Model 1, OR 1.25, 95% CI 1.12–1.39; Model 2, OR 1.20, 95% CI 1.12–1.39). In Model 3 (Table 6), further adjusting for job satisfaction, self-rated health and life satisfaction variables, exposure to workplace aggression in the previous 12 months was associated only with being more likely to leave patient care within 5 years (OR = 1.13, 95% CI 1.00–1.27).

Discussion

Workplace aggression is commonly experienced in clinical medical practice and, as reported recently, it can be a highly negative experience for clinicians, measured across the well being dimensions of intrinsic job satisfaction, self-rated health and satisfaction with life.⁸ The present study provides important further evidence

Table 2. Binary predictor and outcome variables

Variable	<i>n</i>	Yes ^A (%)
Any aggression ^B	9081	6491 (71.5)
Poor support network ^C	9280	2114 (22.8)
Difficult to take time off ^C	9302	3846 (41.3)
Unrealistic patient expectations ^C	9185	2897 (31.5)
Complex patient problems ^C	9190	6146 (66.9)
Intrinsic job satisfaction ^D	9125	4646 (50.9)
Satisfaction with life in general ^E	9170	5291 (57.7)
Self-rated health ^F	9195	3385 (36.8)
Reduce clinical workload in next 5 years ^G	9210	3972 (43.1)
Leave patient care within 5 years ^H	9230	4607 (49.9)
Leave medical work within 5 years ^H	9203	3705 (40.3)

^ASubject to rounding error.

^BYes = infrequently, occasionally, often or frequently; no = not at all.

^CYes = agree or strongly agree; no = strongly disagree, disagree or neutral.

^DYes (very satisfied) >3.2147; no (not very satisfied) ≤3.2147 (range 0–4).

^EYes (very satisfied) 8–10; No (not very satisfied) 1–7 (range 1–10).

^FYes = excellent; no = very good, good, fair or poor.

^GYes = likely or very likely; no = neutral, unlikely or very unlikely.

^HYes = likely, very likely, neutral or unlikely; no = very unlikely.

Table 3. Hours worked in the most recent usual week
CI, confidence interval; NGO, non-governmental organisation

	<i>n</i>	Range	Mean (95% CI)
Hours overall	9243	0–120	42.6 (42.3–42.9)
Hours worked in public and NGO sector services	9126	0–120	20.9 (20.4–21.3)
Hours in private sector services	9126	0–110	19.3 (18.9–19.7)
Hours in residential and aged care sector services	9145	0–58	0.51 (0.47–0.56)

Table 4. Model 1: associations with workforce participation intentions

IMG, international medical graduate; ASGC, Australian Standard Geographic Classification; OR, odds ratio; CI, confidence interval

Variables	Likelihood of reducing clinical workload in next 5 years ^A (n = 8569)			Likelihood of leaving patient care in next 5 years ^B (n = 8574)			Likelihood of leaving medicine entirely in next 5 years ^B (n = 8556)		
	OR	P-value	95% CI	OR	P-value	95% CI	OR	P-value	95% CI
Any aggression ^D	1.29	<0.001	1.16–1.44	1.25	<0.001	1.12–1.39	1.12	0.051	1.00–1.25
Doctor type ^E									
Specialists	0.80	<0.001	0.72–0.89	0.79	<0.001	0.70–0.88	0.77	<0.001	0.68–0.86
Hospital non-specialists	1.43	<0.001	1.19–1.72	3.94	<0.001	3.29–4.73	3.58	<0.001	2.96–4.35
Specialists in training	2.38	<0.001	1.98–2.87	2.07	<0.001	1.71–2.50	1.73	<0.001	1.41–2.13
Gender ^F	1.13	<0.05	1.03–1.25	1.29	<0.001	1.17–1.42	1.28	<0.001	1.16–1.43
Age (years) ^C	1.08	<0.001	1.07–1.09	1.09	<0.001	1.09–1.10	1.10	<0.001	1.10–1.11
IMG ^G	0.78	<0.001	0.69–0.88	0.95	0.420	0.85–1.07	0.99	0.843	0.87–1.12
Mastery ^C	1.07	<0.001	1.03–1.11	1.22	<0.001	1.17–1.26	1.23	<0.001	1.19–1.28
ASGC ^H									
Inner regional	1.24	<0.01	1.09–1.41	1.13	0.076	0.99–1.28	1.15	<0.05	1.00–1.31
Outer regional	1.21	0.062	0.99–1.49	1.20	0.087	0.97–1.47	1.18	0.128	0.95–1.46
Remote/very remote	1.44	<0.05	1.06–1.96	1.12	0.492	0.82–1.53	0.98	0.893	0.70–1.36

^A‘Likely or very likely’ versus ‘neutral, unlikely or very unlikely’.^B‘Unlikely, neutral, likely or very likely’ versus ‘very unlikely’.^CContinuous variable.^DAny aggression comparison group ‘Not at all’.^EDoctor type comparison group ‘general practitioners (GPs) and GP registrars’.^FFemale gender comparison group ‘Male’.^GIMG comparison group ‘Australian medical graduates’.^HRural location comparison group ‘Major city’.

that workplace aggression is also associated with intentions to reduce workforce participation. Although few studies have directly investigated the effect of workplace aggression on medical practitioner workforce participation decisions, the results of the present research are consistent with outcomes identified in cross-profession populations,¹⁷ nurses⁹ and medical practitioners.^{11,12} The findings are also consistent with the results of service sector research, such as with retail and hospitality workers, where exposure to workplace aggression has been found to present a risk to psychological and physical well being, organisational commitment and turnover intentions.^{18,19} However, medical practitioners occupy a unique position in that they predominantly lead the instigation of interventions that aim to improve the health and well being of individuals and communities, in collaboration with other members of the health and social care workforce. The present study pinpoints that medical clinicians experiencing any workplace aggression in the previous 12 months are at increased risk of leaving clinical work, even when controlling for key personal, well being, work conditions and resources and patient-related factors.

It is highly likely that there are many pathways to workforce participation decisions in the medical profession. A recent analysis has determined that a medical workforce characterised by an increasing proportion of women, a changing age profile, including a large proportion of ‘baby boomer’ clinicians approaching traditional retirement age, and changing work–life balance expectations, especially in younger and female medical practitioners, is leading to an overall average decrease in individual work participation levels.²⁰ Complementing this analysis, the results of the present study demonstrate that intention to reduce workforce participation is associated with

doctor type (with a higher risk for the primarily hospital-based hospital non-specialists and specialists in training), with being female and of younger age and with having a greater external control orientation. In addition, intention to reduce workforce participation is associated with taking more annual leave, having a poor support network of medical clinicians, having difficulty taking time off and perceiving patients to have unrealistic expectations about how they can be helped. Conversely, being a specialist clinician, and experiencing greater intrinsic job satisfaction, self-rated health and satisfaction with life are associated with a lesser risk of intending to reduce workforce participation. However, the additional burden of exposure to workplace aggression likely exacerbates the stresses already arising from the often-challenging work in many medical practice settings.

Where there is an intention to step away from patient care, some clinicians may decide to reduce the amount of direct clinical care activities they undertake, such as by increasing managerial, administrative, teaching or research activities or actually reducing hours of work. Where this ‘softer’ option may not be achievable, or where any desire to continue providing patient care is entirely exhausted, undertaking a completely non-clinical role may be the ultimate outcome. Although not able to be determined in the present study, it is possible that some individuals may leave the profession altogether as a result of their exposure to workplace aggression. In any case, clinician exposure to workplace aggression from any source in the previous 12 months carries with it an associated risk to the community of the loss of clinical experience and expertise, and a potential reduction in access to quality medical care.^{7,8}

Table 5. Model 2: associations with workforce participation intentions, further adjusting for work hours, conditions and resources, as well as patient characteristics variables

IMG, international medical graduate; ASGC, Australian Standard Geographic Classification; OR, odds ratio; CI, confidence interval

Variables	Likelihood of reducing clinical workload in next 5 years ^A (n = 7953)			Likelihood of leaving patient care in next 5 years ^B (n = 7955)			Likelihood of leaving medicine entirely in next 5 years ^B (n = 7941)		
	OR	P-value	95% CI	OR	P-value	95% CI	OR	P-value	95% CI
Any aggression ^D	1.15	<0.05	1.02–1.29	1.20	<0.01	1.07–1.35	1.08	0.231	0.95–1.21
Doctor type ^E									
Specialists	0.80	<0.01	0.70–0.91	0.74	<0.001	0.65–0.85	0.74	<0.001	0.64–0.85
Hospital non-specialists	1.40	<0.01	1.11–1.75	3.51	<0.001	2.80–4.40	3.24	<0.001	2.56–4.10
Specialists in training	2.32	<0.001	1.85–2.92	1.73	<0.001	1.37–2.18	1.55	<0.01	1.20–1.98
Gender ^F	1.30	<0.001	1.16–1.45	1.16	<0.01	1.04–1.30	1.13	<0.05	1.01–1.27
Age (years) ^C	1.08	<0.001	1.07–1.09	1.09	<0.001	1.09–1.10	1.10	<0.001	1.09–1.11
IMG ^G	0.82	<0.01	0.73–0.93	0.98	0.750	0.87–1.11	1.01	0.844	0.89–1.15
Mastery ^C	1.01	0.606	0.97–1.05	1.20	<0.001	1.15–1.25	1.21	<0.001	1.16–1.27
ASGC ^H									
Inner regional	1.21	<0.01	1.06–1.38	1.14	0.066	0.99–1.30	1.16	<0.05	1.01–1.34
Outer regional	1.13	0.260	0.91–1.40	1.17	0.163	0.94–1.45	1.18	0.143	0.95–1.48
Remote/very remote	1.27	0.158	0.91–1.76	1.02	0.915	0.73–1.42	0.86	0.414	0.61–1.23
Annual leave taken (weeks) ^C	1.06	<0.001	1.04–1.08	1.03	<0.01	1.01–1.05	1.04	<0.001	1.02–1.06
Hours worked in usual week ^C	1.00	0.372	1.00–1.01	1.00	0.662	0.99–1.01	0.99	<0.01	0.98–0.99
Hours worked public and NGO ^C	1.01	<0.05	1.00–1.02	1.00	0.189	0.99–1.00	1.00	0.309	1.00–1.01
Hours worked private ^C	1.01	<0.05	1.00–1.02	0.99	<0.001	0.98–0.99	1.00	0.398	0.99–1.00
Hours worked residential or aged care ^C	1.02	0.067	1.00–1.05	1.00	0.800	0.98–1.03	1.02	0.266	0.99–1.04
Poor support network ^I	1.21	<0.01	1.07–1.36	1.16	<0.05	1.02–1.30	1.13	<0.05	1.00–1.28
Difficult to take time off ^I	1.33	<0.001	1.19–1.48	1.24	<0.001	1.11–1.38	1.25	<0.001	1.11–1.40
Patients have unrealistic expectations ^I	1.37	<0.001	1.22–1.52	1.35	<0.001	1.21–1.51	1.44	<0.001	1.29–1.62
Patients have complex problems ^I	1.05	0.361	0.94–1.17	0.96	0.427	0.86–1.07	0.96	0.477	0.86–1.08

^A‘Likely or very likely’ versus ‘neutral, unlikely or very unlikely’.^B‘Unlikely, neutral, likely or very likely’ versus ‘very unlikely’.^CContinuous variable.^DAny aggression comparison group ‘Not at all’.^EDoctor type comparison group ‘general practitioners (GPs) and GP registrars’.^FFemale gender comparison group ‘Male’.^GIMG comparison group ‘Australian medical graduates’.^HRural location comparison group ‘Major city’.^IReference group ‘Strongly disagree, disagree or neutral’.

Exposure to workplace aggression is inherent in Australian clinical medical practice and, as argued previously, it is strongly recommended that more concerted efforts be undertaken to prevent and minimise its impact and consequences.^{4,7,8,13} The application of specific workplace aggression prevention and minimisation measures across medical practice settings in Australia has been shown to be inconsistent, with many clinicians reporting uncertainty about whether or not any of a range of strategies was in place in their work setting.¹³ This is despite a growing body of evidence in support of specific measures and strategies that may reduce the risk of workplace aggression and its consequences,^{7,21–25} and recommendations from several national and international organisations.^{1,26,27} Consequently, it is recommended that enhanced external incentives for reform, such as the introduction of specific legislative provisions on the reduction of workplace aggression in medical and other healthcare settings be applied and that efforts be undertaken to ensure practice accreditation standards and criteria directly address workplace aggression prevention and minimisation.¹³

Furthermore, financial incentives and support to improve work health and safety, particularly in smaller private practice settings, seem essential.¹³

The elicited results and subsequent recommendations must be considered in light of several limitations to the study. First, self-report data were obtained from a cross-section of medical practitioners. Although this may have limited the reliability of some responses from the large sample of clinical medical practitioners enrolled in the study, self-selection bias was likely to be minimal because the aggression items were a small component of the MABEL questionnaires, sampling biases were minimal and the profile of respondents was broadly representative of the national population. Second, despite a definition of workplace aggression being provided, survey responses were subject to clinicians’ perceptions of their experiences and intentions. Third, workforce participation intentions cannot be equated with workforce participation decisions, which may only be detected in longitudinal studies. In any case, attribution of causality is not possible in a cross-sectional study.

Table 6. Model 3: associations with workforce participation intentions, further adjusting for work hours, conditions and resources, patient characteristics and well being variables

IMG, international medical graduate; ASGC, Australian Standard Geographic Classification; OR, odds ratio; CI, confidence interval

Variables	Likelihood of reducing clinical workload in next 5 years ^A			Likelihood of leaving patient care in next 5 years ^B			Likelihood of leaving medicine entirely in next 5 years ^B		
	OR	P-value	95% CI	OR	P-value	95% CI	OR	P-value	95% CI
Any aggression ^D	1.12	0.063	0.99–1.26	1.13	<0.05	1.00–1.27	1.01	0.928	0.89–1.14
Doctor type ^E									
Specialists	0.80	<0.01	0.70–0.92	0.76	<0.001	0.66–0.87	0.75	<0.001	0.65–0.87
Hospital non-specialists	1.39	<0.01	1.10–1.75	3.37	<0.001	2.68–4.25	3.11	<0.001	2.44–3.95
Specialists in training	2.37	<0.001	1.88–2.98	1.77	<0.001	1.40–2.25	1.60	<0.001	1.24–2.06
Gender ^F	1.31	<0.001	1.17–1.47	1.19	<0.01	1.07–1.34	1.16	<0.05	1.03–1.31
Age (years) ^C	1.08	<0.001	1.07–1.09	1.10	<0.001	1.09–1.10	1.11	<0.001	1.10–1.11
IMG ^G	0.80	<0.001	0.71–0.91	0.97	0.605	0.85–1.10	1.00	0.950	0.87–1.14
Mastery ^C	0.97	0.186	0.92–1.02	1.09	<0.001	1.04–1.15	1.09	<0.01	1.04–1.15
ASGC ^H									
Inner regional	1.23	<0.01	1.07–1.41	1.16	<0.05	1.01–1.34	1.20	<0.05	1.04–1.38
Outer regional	1.15	0.217	0.92–1.43	1.19	0.128	0.95–1.49	1.19	0.143	0.94–1.50
Remote/very remote	1.34	0.091	0.95–1.87	1.03	0.878	0.73–1.44	0.86	0.420	0.61–1.23
Annual leave taken (weeks) ^C	1.07	<0.001	1.05–1.09	1.04	<0.001	1.02–1.06	1.05	<0.001	1.03–1.07
Hours worked in usual week ^C	1.00	0.245	1.00–1.01	1.00	0.988	0.99–1.01	0.99	<0.01	0.98–1.00
Hours worked public and NGO ^C	1.01	0.069	1.00–1.01	0.99	0.055	0.99–1.00	1.00	0.584	0.99–1.01
Hours worked private ^C	1.01	<0.05	1.00–1.02	0.99	<0.001	0.98–0.99	1.00	0.342	0.99–1.00
Hours worked residential or aged care ^C	1.02	0.078	1.00–1.05	1.00	0.875	0.98–1.03	1.02	0.271	0.99–1.04
Poor support network ^I	1.17	<0.05	1.03–1.32	1.07	0.282	0.95–1.21	1.05	0.496	0.92–1.19
Difficult to take time off ^d	1.29	<0.001	1.16–1.45	1.16	<0.05	1.03–1.29	1.15	<0.05	1.02–1.29
Patients have unrealistic expectations ^I	1.35	<0.001	1.21–1.51	1.31	<0.001	1.17–1.46	1.39	<0.001	1.24–1.57
Patients have complex problems ^I	1.04	0.494	0.93–1.16	0.94	0.249	0.84–1.05	0.94	0.308	0.84–1.06
Intrinsic job satisfaction ^I	0.83	<0.01	0.74–0.93	0.64	<0.001	0.58–0.72	0.60	<0.001	0.53–0.67
Self-rated health ^K	0.83	<0.01	0.74–0.92	0.74	<0.001	0.66–0.83	0.75	<0.001	0.67–0.84
Overall sat with life ^L	0.91	0.105	0.81–1.02	0.80	<0.001	0.71–0.90	0.76	<0.001	0.67–0.86

^A‘Likely or very likely’ versus ‘neutral, unlikely or very unlikely’.^B‘Unlikely, neutral, likely or very likely’ versus ‘very unlikely’.^CContinuous variable.^DAny aggression comparison group ‘Not at all’.^EDoctor type comparison group ‘general practitioners (GPs) and GP registrars’.^FFemale gender comparison group ‘Male’.^GIMG comparison group ‘Australian medical graduates’.^HRural location comparison group ‘Major city’.^IReference group ‘Strongly disagree, disagree or neutral’.^JCompared with ≤ 3.2147 (range 1–4).^KCompared with ‘very good, good, fair or poor’.^LCompared with <8 (range 1–10; 1 = completely dissatisfied; 10 = completely satisfied).

This research demonstrates clear and significant associations between workplace aggression exposure and intentions to reduce or cease patient care, even when accounting for other personal, well being, work and patient factors. Workplace aggression is a major concern for individual clinicians, the medical profession and the community, and the results of this research provide important evidence for policy and practice. Although further research is required, particularly in longitudinal studies to investigate potential causal relationships between workplace aggression exposure and workforce participation decisions by clinicians, systematic efforts to prevent and minimise the likelihood and consequences of workplace aggression in medical practice settings are essential.

Competing interests

None declared.

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