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TITLE

Is a clinician's personal history of domestic and family violence associated with their clinical care of patients? A cross-sectional study.

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ABSTRACT

Objective: To investigate whether domestic and family violence (DFV) impacts upon health professionals' clinical care of DFV survivor patients.
Design, setting: Descriptive, cross-sectional study at an Australian tertiary maternity hospital
Participants: 471 participating female health professionals (45.0% response rate)
Outcome measures: Using logistic and linear regression, we examined whether health professionals' exposure to lifetime DFV was associated with their clinical care on specific measures of training, attitudes, identification and intervention.
Results: DFV survivor health professionals report greater preparedness to intervene with survivor patients in a way that is consistent with ideal clinical care. This indicates that personal DFV experience is not a barrier, and may be a facilitator, to clinical care of survivor patients.
Conclusions: Health professionals are at the front line of identifying and responding to patients who have experienced DFV. These findings provide evidence that survivor health professionals may be a strength to the healthcare organisations in which they work since among the participants in this study, they appear to be doing more of the work seen as better clinical care of survivor patients. We discuss the need for greater workplace supports aimed at promoting safety and recovery from violence and strengthening clinical practice with patients.

Strengths and limitations of this study

- Strength of this study include: adjustment for potential confounders in regression rendering it distinct in this under-researched field; the inclusion of health

professionals from all clinical backgrounds reflected in hospitals, and the recruitment of primary domestic and family violence (DFV) health professional survivors.

- Limitations of this study include: the single recruitment site which prevents generalisation of the findings, and survey self-report and social desirability which may have led to the underreporting of DFV.
- While our 45.0% response rate is not ideal, considering the work demands of the nursing and medical participants in this study, and the representational participation of nurses, doctors and allied health professionals, we argue that our response rate is both acceptable and comparable to similar research.

Keywords: Intimate Partner Violence – Family Violence – Domestic Violence - Violence Against Women – Health Professionals – Clinical Practice

BACKGROUND

Intimate partner, family violence and sexual assault are common traumas for Australian female nurses, doctors and allied health professionals [1]. Domestic violence (DV) is a global public health issue, defined by the World Health Organization as "any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in that relationship" [2]. Family Violence (FV) is harmful behaviour perpetrated by a non-intimate family member at any time in the life course, including the witnessing of violence between parents [3]. Throughout this paper, we use the term, 'domestic and family violence' (DFV) to refer to violence by a partner and/or non-intimate family member; DV when referring to violence by a partner; FV when referring to violence by a non-intimate family member; and 'survivor' when referring to someone (health professional or patient) who has experienced DFV. Women who have survived DV have poorer physical and psychological health, requiring more health care than non-abused women [4]. Australian women's lifetime prevalence of physical or sexual violence by an intimate partner is 25%, with 2.1% experiencing violence in the last 12 months [5]. A recent study of 471 Australian female health professionals found that their DV prevalence was higher than in the general community, and lower than among unwell women attending primary care, with a lifetime prevalence of 33.6%, while the 12-month prevalence was 11.5% [1]. When

the definition of violence was expanded to include FV, the lifetime DFV increased to 45.2% [1].

The role of the health system and health professionals is to identify survivor patients and provide a timely, evidence-based response [6]. There is mixed evidence about whether health professionals' personal experiences of DFV have an impact on the clinical care of their survivor patients [7-15]. An extensive search of the academic literature identified four surveys about survivor health professionals' clinical care of survivor patients [7 8 10 15]. Two of these studies found that survivor health professionals performed more DFV screening and raised DFV with survivor patients more frequently during follow up visits [7 8]. However, the other two studies found no association between DFV experience and clinical care [10 15]. There were problems with three of these four studies [7 8 10]. For example, two did not adjust for potentially confounding factors in their analysis [7 8], and the third, now nearly 20 years old, defined their survivor exposure group based on only two non-validated DFV questions [10]. The strongest research to date surveyed Swedish health professionals (N=588) [15]. After adjusting for professional background, experience and training, it found that care of survivor patients was not associated with personal experience of DFV, however DFV training was positively associated with all aspects of care and knowledge [15]. Another four studies about clinical care of survivor patients have been from the perspective of health professionals' whose DFV exposure was through family, friends or patients [9 11 13 14]. We argue that the need for a more rigorous study is evident.

METHODS

Aim, design and setting

The objective of this study was to address a gap in the available evidence about whether Australian health professional's personal history of DFV is associated with their clinical care of survivor patients. The research question at the outset of this project was: Is personal experience of DFV associated with a health professional's attitudes about DFV survivor patients and the role of the health workplace; identification of survivor patients; comfort to discuss DFV and clinical interventions with survivor patients? We hypothesised that, after adjusting for possible confounding background variables, compared with their non-abused

peers, survivor health professionals would: 1) demonstrate more sensitive attitudes towards survivors; 2) feel more comfortable discussing DFV and sexual assault with their patients; 3) ask more patients about DFV; 4) identify more survivors within a six-month period; and 5) provide more DFV interventions to survivor patients, including DFV referral.

A full description of the study design, setting, participants and recruitment process has been reported previously in a paper about prevalence [1]. In brief, we conducted an anonymous and voluntary cross-sectional survey of all health professionals in one Australian tertiary maternity hospital between 8 August and 31 December 2013. Participants were female health professionals (nurses, doctors, social workers) working with patients. An online survey link and encouragement to participate by the Chief Executive Officer was distributed via email to all part-time/permanent clinical staff - nurse/midwives, doctors and allied health professionals. Staff were ineligible to participate if they were employed casually or did not work in a clinical capacity (i.e. administration staff).

Data collection and measures

Domestic violence was measured using the Composite Abuse Scale (CAS), a well validated and widely used self-report measure of physically, sexually and emotionally abusive behaviours perpetrated by an intimate partner [16]. Exposure to DV was measured by: scoring on the 12-month subscales, or two of the lifetime subscales, 'Severe Combined Abuse' or 'Physical and Emotional Abuse', or by scoring >7. Family violence was measured by answering positively to either of two questions about physical, emotional and sexual abuse by a family member and witnessing parental abuse. Overall, 45.2% (212/471) of the female participants in this sample qualified for inclusion into the exposure group [1].

The main predictor variable was exposure to DFV. In a follow-up analysis, the predictor variables were DFV training and demographics. The outcome variables were: attitudes (measured by Physician Readiness to Manage Intimate Partner Violence Survey PREMIS [17]), comfort discussing DFV, DFV inquiry and interventions after identifying a new DFV case during a six-month period (Box 1). Adjustment for potential confounding variables was made *a priori* based on literature, and included: age (40+ years) [14 18], professional background (allied health) [10 14], DFV training (1+ days) [9 10 15] and years of clinical experience (10+ years) [14 15].

Box 1 Variables included in analysis [a]

Independent variables	**Description**
Exposure to domestic and family violence	30 CAS items measured 12-month and lifetime intimate partner violence and 2 family violence questions
DFV training [b]	6 items measured graduate and postgraduate DFV training history (<8 hours / >8 hours)
Demographics	3 items measured: age (< 40 years / >40 years), professional background (medical / nursing / allied health), and years of clinical experience (<20 years / >20 years)
Dependent variables	**Description**
Attitudes	12 PREMIS items comprised two subscales; 'Victim understanding' (attitudes about survivors) and 'Workplace issues' (attitudes about the role of the workplace). Scoring via a 7-point Likert-type scale, with some items reverse scored due to intentional negative wording
Comfort discussing DFV	4 items scored on a 5-point Likert-type scale measured comfort to discuss DFV and sexual assault with patients ('comfortable' / 'uncomfortable')
	4 items scored on a 6-point Likert-type scale measured: 'Did not avoid issue of DFV', 'Did not find DFV upsetting to talk about', 'Very aware of the issue' and 'Tried to go the extra mile with patients' ('agree' / 'disagree'). Some items reverse scored because of intentional negative wording
DFV inquiry	1 item scored on a 5-point Likert-type scale measured frequency of asking all patients about DFV ('never' / 'ever') during the previous 6 months
	5 items measured identification of 1+ new patient survivor/s ('0 new cases' / '1+ new cases') in the previous 6 months
Interventions after identifying a new DFV case	10 items scored on a 5-point Likert-type scale measured: risk assessment, safety planning, case file documentation, use of clinical guideline, access of DFV information to give to patients, clinical discussion at team meeting and with manager, and DFV referrals ('never'/'1-3+ times') during the previous 6 months
Variables used for adjustment	
Age	> 40 years
Professional background	Allied health: social workers were the most common allied health professionals at this hospital and it was anticipated that they would likely have been in receipt of greater undergraduate and professional DFV training
DFV training	> 8 hours
Years of clinical experience	> 10 years

Notes
[a] All items/measures were made into binary variables unless otherwise noted
[b] Training was also analysed as an outcome (dependent) variable (Table 2)

Statistical analysis

Clinical interventions to identify and respond to DFV were summarised using frequencies and percentages for categorical data and means and standard deviations for ordinal data.

Independent *t*-tests and Chi-Square tests of comparison were used to compare mean scores. Linear regression compared differences in mean scores across exposure for attitude scores, while logistic regression was used for comfort asking about DFV and clinical intervention variables. Odds ratios (ORs), 95% confidence intervals (CIs) and *P*-values were used to assess the likely size of the association between each clinical action and DFV.

Data was analysed with STATA version 13.1 [19].

RESULTS

Participant characteristics: The survey was sent to 1,047 female health professional staff and 471 participated: 366 completed the survey electronically, while 105 returned a paper version, giving a response rate of 45.0%. Most participants were nurse/midwives, aged 30-60 years, had ten or more years of experience, and were demographically representative of their non-participating peers (Table 1). Survivor health professional participants (45.2%, 212/469) were significantly more likely to be aged 30-39 years and have an allied health background compared to participants who were not survivors [1].

Table 1. Personal characteristics of participating health professionals

Characteristic	Total participants [a] (*n*=471) *n* (%)	No history of violence (*n*=257) *n* (%)	Lifetime domestic and family violence (*n*=212) *n* (%)	*P*-Value
Age (years)				
<30	81 (17.2)	52 (20.2)	29 (13.7)	.063
30-39	123 (26.2)	57 (22.2)	66 (31.1)	.029
40-49	100 (21.3)	54 (21.0)	46 (21.7)	.857
50-59	133 (28.3)	70 (27.2)	62 (29.2)	.630
≥ 60	33 (7.0)	24 (9.3)	9 (4.2)	.036
Health professional background				
Nursing/Midwifery	317 (67.5)	181 (70.7)	134 (63.2)	.086
Medical	69 (14.7)	38 (14.8)	31 (14.6)	.946
Allied Health	61 (13.0)	21 (8.2)	40 (18.9)	.001
Other [b]	23 (4.9)	16 (6.3)	7 (3.3)	.148
Years of clinical experience				
<5	70 (15.0)	39 (15.4)	31 (14.6)	.826
5-9	67 (14.3)	35 (13.8)	32 (15.1)	.687
10-19	119 (25.4)	62 (24.4)	57 (26.9)	.542
20-29	99 (21.2)	53 (20.9)	45 (21.2)	.924
≥30	113 (24.2)	65 (25.6)	47 (22.2)	.390
Participants who supervise other staff	226 (48.2)	122 (47.8)	102 (48.1)	.954

Adult intimate relationship (ever) [c]	431 (92.9)	222 (88.1)	209 (98.6)	<.01

Notes
[a] Denominators vary due to missing responses. Maximum missing data *n*=3 (0.6%)
[b] Health professionals working in a clinical role not already specified, ie. Imaging, Pharmacy
[c] 33 participants were omitted from relationship questions because they had never been in a relationship

Training and preparedness: Survivor health professionals were more likely to have received one or more days of DFV training (adj OR 1.9, 95% CI 1.2-3.2) and to report more sensitive attitudes about DFV survivors (adj. coef. 0.2, 95% CI 0.1-0.4) compared to their colleagues who had not experienced DFV. They were no more likely to find it upsetting to talk about DFV with their patients (adj OR 0.8, 95% CI 0.5, 1.1) (Table 2). Irrespective of whether a health professional had experienced DFV, having undertaken at least one day of DFV training was positively associated with good clinical care, including identifying survivor patients (adj OR 9.6, 95% CI 5.0, 18.8), risk assessment (adj OR 4.6, 95% CI 2.2, 9.5), safety planning (adj OR 4.4, 95% CI 2.1, 8.9) and referral (adj OR 2.1, 95% CI 1.0, 4.1). This finding occurred even after adjustment for possible confounders (Table 3). Univariate analysis suggested a positive association between hours of DFV training and asking patients about DFV.

Table 2. Health professional's personal exposure to DFV and their clinical practice

		Lifetime abuse by partner/family member				
	All participants (*n*=471) [a]	***No abuse*** (*n*=257)	***Abuse*** (*n*=212)	**Unadjusted**	**Adjusted** [b]	***P***
		n (%)		*OR (95% CI)*		
Training (1+ days)	94 (20.1)	36 (14.1)	58 (27.4)	2.3 (1.4, 3.6)	1.9 (1.2, 3.2)	.007
Preparedness for practice		*Mean (s.d.)*		*Coef (95% CI)*		
Attitudes about survivors	5.1 (1.0)	4.9 (1.0)	5.3 (0.9)	0.3 (0.2, 0.5)	0.2 (0.1, 0.4)	.009
Attitudes about the role of health services	4.4 (1.1)	4.3 (1.0)	4.4 (1.2)	0.1 (-0.1, 0.3)	-0.1 (-0.3, 0.1)	.550
		n (%)		*OR (95% CI)*		
Recent clinical practice [c]	(*n*=422)	(*n*=226)	(*n*=194)			
Comfort discussing DFV	194 (46.0)	94 (41.6)	99 (51.0)	1.5 (1.0, 2.2)	1.1 (0.7, 1.7)	.578
Comfort discussing sexual assault	165 (39.0)	77 (34.1)	87 (44.8)	1.6 (1.1, 2.3)	1.2 (0.8, 1.8)	.455
Did not avoid issue of DFV	254 (61.9)	93 (42.5)	62 (32.8)	1.5 (1.0, 2.3)	1.3 (0.8, 2.0)	.232
Did not find upsetting to talk about	229 (55.8)	127 (56.0)	102 (54.0)	0.8 (0.6, 1.2)	0.8 (0.5, 1.1)	.186
Very aware of the issue	220 (54.3)	107 (50.0)	111 (59.0)	1.4 (1.0, 2.1)	1.2 (0.8, 1.8)	.399
Tried to go the extra mile with patients	181 (44.5)	84 (38.7)	95 (50.3)	1.6 (1.1, 2.4)	1.3 (0.9, 2.0)	.205
DFV inquiry						
Inquiry of 1+ patient/s	260 (61.6)	124 (54.9)	134 (69.1)	1.8 (1.2, 2.7)	1.5 (1.0, 2.3)	.074
Identified 1+ new cases	193 (45.7)	91 (40.1)	101	1.6 (1.1, 2.4)	1.3 (0.8, 2.0)	.263

			(52.3)			
Intervention/s with survivor patients [d]	(*n*=193)	(*n*=91)	(*n*=101)			
Risk assessment	102 (53.7)	41 (46.1)	60 (60.0)	1.8 (1.0, 3.1)	1.2 (0.6, 2.4)	.501
Safety planning	80 (41.7)	28 (31.1)	52 (51.5)	2.3 (1.3, 4.2)	1.6 (0.8, 3.2)	.208
Case file documentation	139 (72.4)	63 (70.0)	75 (74.3)	1.2 (0.6, 2.3)	1.1 (0.5, 2.2)	.786
Utilised DFV Clinical Practice Guideline	76 (40.0)	37 (41.1)	38 (38.4)	0.9 (0.5, 1.6)	0.7 (0.4, 1.4)	.363
Accessed DFV information	60 (31.4)	22 (24.4)	37 (37.0)	1.8 (1.0, 3.4)	2.0 (1.0, 4.0)	.040
Discussed DFV at a team meeting	125 (66.1)	56 (62.2)	68 (69.4)	1.4 (0.7, 2.5)	1.2 (0.6, 2.3)	.542
Discussed a DFV case with manager	146 (76.4)	66 (74.2)	79 (78.2)	1.2 (0.6, 2.4)	1.1 (0.5, 2.3)	.751
DFV referrals						
Internal hospital service	166 (86.0)	78 (85.7)	87 (86.1)	1.0 (0.5, 2.3)	1.0 (0.4, 2.5)	.960
Community DFV service	78 (40.6)	30 (33.3)	48 (47.5)	1.8 (1.0, 3.3)	1.3 (0.7, 2.7)	.387

Notes:
[a] Denominators vary due to missing values, maximum missing values *n*=19 (4.0%)
[b] Adjusted for age (40+ years), profession (social work), years of clinical experience (10+ years), training (1+ days)
[c] During the last 6 months. 48 participants were excluded from the remaining analyses because they had not been in clinical practice
[d] 277 participants were excluded from analyses (229 participants who had not identified a new DFV case & 48 participants not in clinical practice)

Identifying survivor patients: In the unadjusted analysis, being a survivor health professional was associated with asking patients about DFV during the previous six months and motivation 'to go the extra mile' with them. However, in the adjusted analysis a between-group difference did not remain, although the significance level for asking patients about DFV was approaching .05 (adj OR 1.5, 95% CI 1.0, 2.3, *p*.07) (Table 2).

Clinical care: Of the 193 participants who identified a survivor patient in the last six months, the unadjusted results indicated that survivor health professionals were more likely than others to have provided DFV information to patients, conducted risk assessments, safety plans, and made referrals to services (Table 2). However, in the adjusted analysis, the only association that remained was accessing DFV information for patients (adj OR 2.0, 95% CI 1.0-4.0). This analysis also suggested that training (1+ days) and being an allied health professional was associated with safety planning and referral.

Table 3. The effect of training on clinical practice

		Length of training				
	All participants (*n*=471) [a]	**< 1 day** (*n*=375)	**1+ day** (*n*=94)	**Unadjusted**	**Adjusted** [b]	***P***
	n (%)			*OR (95% CI)*		
Demographics						
Age						
<40 years	204 (43.4)	169 (45.2)	33 (35.1)	0.7 (0.4, 1.0)	0.6 (0.3, 1.1)	.090

>40+ years	266 (56.6)	205 (54.8)	61 (64.9)	1.5 (0.9, 2.4)	1.8 (0.9, 3.4)	.090
Professional background						
Nursing/midwifery	317 (67.5)	268 (71.7)	48 (51.1)	0.4 (0.3, 0.6)	0.4 (0.2, 0.6)	.000
Medical	69 (14.7)	55 (14.7)	13 (13.8)	0.9 (0.5, 1.8)	0.9 (0.5, 1.8)	.816
Allied Health	61 (13.0)	31 (8.3)	30 (31.9)	5.2 (2.9, 9.1)	5.3 (3.0, 9.4)	.000
Years of clinical experience						
< 20 years	256 (54.7)	207 (55.6)	47 (50.0)	0.8 (0.5, 1.2)	0.6 (0.3, 0.9)	.028
> 20+ years	212 (45.3)	165 (44.3)	47 (50.0)	1.2 (0.8, 2.0)	1.7 (1.1, 2.9)	.028
Supervision of other staff	226 (48.2)	175 (46.9)	49 (52.1)	1.2 (0.8, 1.9)	1.7 (1.0, 2.9)	.038
Preparedness for practice		*Mean (s.d.)*			*Coef (95% CI)*	
Attitudes about survivors	5.1 (1.0)	4.9 (1.0)	5.8 (0.7)	0.9 (0.6, 1.1)	0.8 (0.6, 1.1)	.000
Attitudes about the role of health services	4.4 (1.1)	4.2 (1.0)	5.0 (1.2)	0.8 (0.6, 1.1)	0.7 (0.4, 0.9)	.000
		n (%)			*OR (95% CI)*	
Recent clinical practice [c]	(*n*=422)	(*n*=336)	(*n*=84)			
Comfort discussing DFV	194 (45.9)	125 (37.1)	68 (80.9)	7.2 (4.0, 13.0)	6.4 (3.5, 11.8)	.000
Comfort discussing sexual assault	165 (39.0)	104 (30.9)	61 (72.6)	5.9 (3.5, 10.1)	5.1 (2.9, 8.9)	.000
Did not avoid issue of DFV	254 (61.9)	190 (58.5)	63 (75.9)	2.3 (1.3, 3.9)	2.2 (1.2, 3.9)	.008
Did not find upsetting to talk about	229 (55.8)	173 (53.2)	54 (65.1)	1.6 (1.0, 2,7)	1.6 (0.9, 2.7)	.095
Very aware of the issue	220 (54.3)	149 (46.4)	70 (85.4)	6.7 (3.5, 12.9)	7.0 (3.5, 13.7)	.000
Tried to go the extra mile with patients	181 (44.5)	118 (36.5)	62 (75.6)	5.4 (3.1, 9.3)	5.0 (2.8, 8.9)	.000
DFV inquiry						
Inquiry of 1+ patient/s	260 (61.6)	178 (53.0)	81 (96.4)	24.0 (7.4, 77.4)	24.1 (7.3, 78.8)	.000
Identified 1+ new cases	193 (45.7)	121 (35.9)	71 (85.5)	10.6 (5.5, 20.2)	9.6 (4.9, 18.8)	.000
Intervention/s with survivor patients [d]	(*n*=193)	(*n*=121)	(*n*=71)			
Risk assessment	102 (53.7)	47 (39.5)	54 (77.1)	5.2 (2.6, 10.1)	4.6 (2.2, 9.5)	.000
Safety planning	80 (41.7)	31 (25.8)	48 (67.6)	6.0 (3.1, 11.4)	4.3 (2.1, 8.8)	.000
Case file documentation	139 (72.4)	76 (63.3)	62 (87.3)	4.0 (1.8, 8.8)	3.4 (1.5, 7.8)	.004
Utilised DFV Clinical Practice Guideline	76 (40.0)	32 (26.9)	43 (61.4)	4.3 (2.3, 8.1)	4.2 (2.1, 8.3)	.000
Accessed DFV information	60 (31.4)	32 (26.7)	27 (38.6)	1.7 (0.9, 3.2)	1.7 (0.9, 3.4)	.120
Discussed DFV at a team meeting	125 (66.1)	69 (59.0)	55 (77.5)	2.4 (1.2, 4.7)	2.4 (1.1, 5.0)	.019
Discussed a DFV case with manager	146 (76.4)	82 (68.9)	63 (88.7)	3.5 (1.5, 8.2)	3.3 (1.4, 8.1)	.007
DFV referrals						
Internal hospital service	166 (86.0)	97 (80.2)	68 (95.8)	5.6 (1.6, 19.4)	6.4 (1.7, 23.6)	.005
Community DFV service	78 (40.6)	35 (29.2)	42 (59.1)	3.5 (1.9, 6.5)	2.1 (1.0, 4.1)	.042

Notes:

[a] Denominators vary due to missing value. Maximum missing data *n*=3 (1.5%), unless otherwise specified

[b] Adjusted for age (40 years and older), profession (social work) and years of clinical experience (10 or more years)

[c] During the last 6 months. 48 participants were excluded from the remaining analyses because they had not been in clinical practice

[d] 277 participants were excluded from analyses (229 participants who had not identified a new DFV case & 48 participants not in clinical practice)

DISCUSSION

These findings provide evidence that survivor health professionals may be doing more of the work seen as better clinical care of survivor patients than those without personal experience. Being a survivor health professional was significantly associated with uptake of DFV training, more sensitive attitudes about survivors and a higher likelihood of having accessed DFV information to give to survivor patients, which supports the hypothesis that survivor health professionals would demonstrate more sensitive attitudes about survivors compared to their non-abused peers. There was only partial support for the hypothesis that survivor health professionals would recall providing more DFV interventions to survivor patients since the only significant association was having accessed more DFV information for patients. However, the hypotheses that survivor health professionals would feel more comfortable discussing DFV with their patients, ask more patients about DFV, and identify more survivors within a six-month period, were not supported after adjusting for age, years of experience and training. Although, it is notable that survivor health professionals asked more patients about DFV at a level approaching significance.

Strengths & limitations

Strengths of this study include adjustment for potential confounders in regression [7 8 11 13 14], the inclusion of health professionals from all clinical backgrounds reflected in hospitals [7 8 10-14], and the recruitment of primary DFV survivors [9 11 13 14]. Limitations of this study include self-report and social desirability which may have led to under-reporting of abuse, and the single recruitment site that prevents generalisability of findings [20 21]. It is possible that DFV survivors were more motivated to participate in the project than other people [20], and we acknowledge the possibility that non-respondents may have differed from respondents in a way that affected our conclusions. Considerable attempts were made to address selection bias by active recruitment and strong encouragement to participate; a 45.0% response rate was achieved. Despite the sample limitations, considering the work demands of our participants and the representational participation of nurses, doctors and allied health professionals, we argue that our response rate is acceptable and comparable to similar research [7 8].

The study in the context of other studies

The findings of an association between a health professional's history of DFV and aspects of clinical care of survivor patients echoes other research [7 14]. A possible interaction between DFV training, personal experience and clinical care has been suggested previously [9]. However, the finding in this study of a relationship between a health professional's history of DFV and their participation in training is critical and new. This finding was surprising; we did not posit a hypothesis about survivors accessing more hours of professional training. We suggest that survivor health professionals may be more likely to attend training because they understand the issue, resultant impact on health and the need for timely responses, and/or they are seeking information or validation about their own experience.

The association between being a survivor health professional, holding more sensitive attitudes about survivors and providing DFV information to patients is consistent with one previous study [14]. This small study examined nurses' thoughts, feelings and proposed actions in response to identifying survivor patients, finding an association between being a survivor nurse and having more sensitive, empathetic responses to survivor patients [14]. Our study extends these findings since that analysis did not adjust for potential confounders and the exposure group included health professional participants with secondary exposure to DFV through friends/family. We postulate that survivor health professionals may hold more sensitive attitudes about survivors and fewer misconceptions about DFV because of empathy stemming from a shared trauma experience. Additionally, they may be more likely to access DFV information for their patients because they believe that DFV awareness is an important intervention in itself.

Implications

Given the association between being a survivor health professional and attendance at DFV training, this should be regarded when developing and delivering DFV training for health professionals [7]. Such training could incorporate reflection, safety information, emotional health psychoeducation, referral, workplace support, and promoting a safe and supportive healthcare workplace [15 22]. More broadly, these findings provide evidence that survivor health professionals are an asset to the organisations in which they work since among the participants

in this study, they appear to be doing more of the work seen as better clinical care of survivor patients. This finding rebukes the misconception that women who have experienced DFV are overly vulnerable, a distortion which can encourage women to remain women silent, especially at work, for fear of how they might be regarded if they speak up [23]. This study presents an opportunity for health services to explore how the lived experience of DFV for both their patient *and* staff survivors could inform and improve their service. A past critique of health and other "mainstream" DFV response services was that they have not meaningfully consulted survivors [24]. Listening to the experiences and needs of survivor health professionals may enhance the support those health professionals feel from their employer, strengthening their personal and professional capacity as they care for patients. There is evidence that accessing support for DFV can result in meaningful change in survivors' lives, including in their employment [18]. We argue the need for greater workplace supports aimed at promoting safety and recovery from violence and strengthening clinical practice with patients. This requires organisational leadership, evidence-based response guidelines and resourced individuals to whom a disclosure can be made and who can provide varied levels of support (resource information, clinical debriefing, longer term emotional support) [1]. More research is required to understand better the impact of DFV workplace supports on health professional women's wellbeing and clinical care. This study sheds light on the survivor experience, especially for women at work.

Conclusion

This research demonstrates that health professionals with a lived experience of domestic and family violence attend more training aimed at improving clinical care of survivor patients, self-report more sensitive attitudes about survivors and access more DFV information for patients after disclosure. This suggests that DFV is not a barrier, and may be a facilitator, to clinical care of survivor patients. Health workplaces should take account of this in their response to survivor health professionals, the development of DFV training offered to staff, clinical care policies with patients and workplace supports.

List of abbreviations

CAS: Composite Abuse Scale

DV: Domestic violence

DFV: Domestic/Family violence

FV: Family violence

DECLARATIONS

Ethics approval and consent to participate

Ethics approval was provided by both the recruiting hospital and a University Human Research and Ethics Committee (Ethics ID: 1339986, dated 10 May 2013). Consent to participate was implied through completed and returned surveys.

Consent for publication

Not applicable.

Availability of data and materials

At present, the data and materials (survey) are not publicly available but can be obtained from the authors upon reasonable request. The Composite Abuse Scale and Physician Readiness to Manage Intimate Partner Violence Survey are publicly available [16 17].

Competing interests

The authors declare that they have no competing interests.

Funding

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Authors' contributions

This manuscript is part of the doctoral work of EM. EM, KH and CH participated in the design of the study. EM was primarily responsible for all aspects of the work, including data collection and analysis, with KH contributing significantly to data analysis. EM, KH and CH were all responsible for interpretation of the findings. EM wrote the manuscript, with important contributions during many reviews by KH and CH. All authors read and approved the final manuscript.

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2-3
Objectives	3	State specific objectives, including any prespecified hypotheses	3
Methods			
Study design	4	Present key elements of study design early in the paper	3
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	3
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	3
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	4
Bias	9	Describe any efforts to address potential sources of bias	6
Study size	10	Explain how the study size was arrived at	6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	4
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	4
		(*b*) Describe any methods used to examine subgroups and interactions	N/A
		(*c*) Explain how missing data were addressed	7-8 specify the number and percentage of missing data. Since less than 5% of the

			data was missing, we employed the '95% rule' which says that 'different treatments of missing values will have little or no impact on the substantive interpretations as 95 per cent of the observations are available for use'
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(*e*) Describe any sensitivity analyses	N/A
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	5
		(b) Give reasons for non-participation at each stage	5
		(c) Consider use of a flow diagram	We are happy to add this if the reviewers would like it
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	10
		(b) Indicate number of participants with missing data for each variable of interest	10-13
Outcome data	15*	Report numbers of outcome events or summary measures	N/A
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	4-5
		(*b*) Report category boundaries when continuous variables were categorized	N/A
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	N/A
Discussion			
Key results	18	Summarise key results with reference to study objectives	5-6

Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	6
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	5-7
Generalisability	21	Discuss the generalisability (external validity) of the study results	7
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	9

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

BMJ Open

Is a clinician's personal history of domestic violence associated with their clinical care of patients? A cross-sectional study.

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Primary Subject Heading:	Public health
Secondary Subject Heading:	Evidence based practice
Keywords:	Intimate partner violence, Family violence, Domestic violence, Health professionals, Clinical Practice

TITLE

Is a clinician's personal history of domestic violence associated with their clinical care of patients? A cross-sectional study.

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ABSTRACT

Objective: To investigate whether domestic violence (DV) impacts upon health professionals' clinical care of DV survivor patients.
Design, setting: Descriptive, cross-sectional study at an Australian tertiary maternity hospital
Participants: 471 participating female health professionals (45.0% response rate)
Outcome measures: Using logistic and linear regression, we examined whether health professionals' exposure to lifetime DV was associated with their clinical care on specific measures of training, attitudes, identification and intervention.
Results: DV survivor health professionals report greater preparedness to intervene with survivor patients in a way that is consistent with ideal clinical care. This indicates that personal DV experience is not a barrier, and may be a facilitator, to clinical care of survivor patients.
Conclusions: Health professionals are at the front line of identifying and responding to patients who have experienced DV. These findings provide evidence that survivor health professionals may be a strength to the healthcare organisations in which they work since among the participants in this study, they appear to be doing more of the work seen as better clinical care of survivor patients. We discuss the need for greater workplace supports aimed at promoting safety and recovery from violence and strengthening clinical practice with patients.

Strengths and limitations of this study

- Strength of this study include: adjustment for potential confounders in regression rendering it distinct in this under-researched field; the inclusion of health

professionals from all clinical backgrounds reflected in hospitals, and the recruitment of primary domestic violence (DV) health professional survivors.

- Limitations of this study include: the single recruitment site which prevents generalisation of the findings, and survey self-report and social desirability which may have led to the underreporting of DV.
- While our 45.0% response rate is not ideal, considering the work demands of the nursing and medical participants in this study, and the representational participation of nurses, doctors and allied health professionals, we argue that our response rate is both acceptable and comparable to similar research.

Keywords: Domestic Violence – Intimate Partner Violence – Family Violence – Violence Against Women – Health Professionals – Clinical Practice

BACKGROUND

Domestic violence (DV), including intimate partner, family violence and sexual assault, are common traumas for Australian female nurses, doctors and allied health professionals [1]. DV is a global public health issue, defined by the World Health Organization as "any behaviour within an intimate relationship that causes physical, psychological or sexual harm to those in that relationship" [2]. It can encompass partner violence, child abuse or abuse by any member of a household [2]. Throughout this paper, we use the term, '*domestic violence'* (DV) to refer to violence by a partner or a family member; and '*survivor'* when referring to someone (health professional or patient) who has experienced DV [3]. Women who have survived DV have poorer physical and psychological health, requiring more healthcare than non-abused women [4]. Australian women's lifetime prevalence of physical or sexual violence by an intimate partner is 25%, with 2.1% experiencing violence in the last 12 months [5]. A recent study of 471 Australian female health professionals found that the prevalence of intimate partner violence was higher than in the general community, and lower than among unwell women attending a General Practitioner, with a lifetime prevalence of 33.6%, while the 12-month prevalence was 11.5% [1]. The lifetime prevalence of DV (violence by a partner and/or other family member) was 45.2% [1].

The role of the health system and health professionals is to identify survivor patients and provide a timely, evidence-based response [6]. There is mixed evidence about whether health professionals' personal experiences of DV have an impact on the clinical care of their survivor patients [7-15]. An extensive search of the academic literature identified four surveys about survivor health professionals' clinical care of survivor patients [7 8 10 15]. Two of these studies found that survivor health professionals performed more DV screening and raised DV with survivor patients more frequently during follow up visits [7 8]. However, the other two studies found no association between DV experience and clinical care [10 15]. There were problems with three of these four studies [7 8 10]. For example, two did not adjust for potentially confounding factors in their analysis [7 8], and the third, now nearly 20 years old, defined their survivor exposure group based on only two non-validated DV questions [10]. The strongest research to date surveyed Swedish health professionals (N=588) [15]. After adjusting for professional background, experience and training, it found that care of survivor patients was not associated with personal experience of DV, however DV training was positively associated with all aspects of care and knowledge [15]. Another four studies about clinical care of survivor patients have been from the perspective of health professionals' whose DV exposure was through family, friends or patients [9 11 13 14]. We argue that the need for a more rigorous study is evident.

METHODS

Aim, design and setting

The objective of this study was to address a gap in the available evidence about whether Australian health professional's personal history of DV is associated with their clinical care of survivor patients. The research question at the outset of this project was: *Is personal experience of DV associated with a health professional's attitudes about DV survivor patients and the role of the health workplace; identification of survivor patients; comfort to discuss DV and clinical interventions with survivor patients?* We hypothesised that, after adjusting for possible confounding background variables, compared with their non-abused peers, survivor health professionals would: 1) demonstrate more sensitive attitudes towards survivors; 2) feel more comfortable discussing DV and sexual assault with their patients; 3) ask more patients about DV; 4) identify more survivors within a six-month period; and 5) provide more DV interventions to survivor patients, including DV referral. While not an initial focus of the study,

the effect of training on clinical practice emerged as an interesting finding during the data analysis and was included in the results.

A full description of the study design, setting, participants and recruitment process has been reported previously in a paper about prevalence [1]. In brief, we conducted an anonymous and voluntary cross-sectional survey of all health professionals in one Australian tertiary maternity hospital between 8 August and 31 December 2013. Participants were female health professionals (nurses, doctors, social workers) working with patients. An online survey link and encouragement to participate by the Chief Executive Officer was distributed via email to all part-time/permanent clinical staff - nurse/midwives, doctors and allied health professionals. Staff were ineligible to participate if they were employed casually or did not work in a clinical capacity (i.e. administration staff).

Data collection and measures

Exposure to DV encompassed 12-month and adult lifetime intimate partner violence and/or lifetime violence by a family member. Violence by an intimate partner was measured using the Composite Abuse Scale (CAS), a well validated and widely used self-report measure of physically, sexually and emotionally abusive behaviours perpetrated by an intimate partner [16]. This was measured by: scoring on the 12-month subscales, or two of the lifetime subscales, 'Severe Combined Abuse' or 'Physical and Emotional Abuse', or by scoring >7. Violence by a family member was measured by answering positively to either of two questions about lifetime physical, emotional and sexual abuse by a family member and witnessing parental abuse. Overall, 45.2% (212/471) of the female participants in this sample qualified for inclusion into the DV exposure group [1].

The main predictor variable was exposure to DV. In a follow-up analysis, the predictor variables were DV training and demographics. The outcome variables were: attitudes (measured by Physician Readiness to Manage Intimate Partner Violence Survey PREMIS [17]), comfort discussing DV, DV inquiry and interventions after identifying a new DV case during a six-month period (Box 1). Adjustment for potential confounding variables was made *a priori* based on literature, and included: age (40+ years) [14 18], professional background (allied health) [10 14], DV training (1+ days) [9 10 15] and years of clinical experience (10+ years) [14 15].

Box 1 Variables included in analysis [a]

Independent variables	**Description**
Exposure to DV [b]	30 CAS items measured 12-month and lifetime intimate partner violence and 2 family violence questions
DV training [c, *]	6 items measured graduate and postgraduate DV training history (<8 hours [c] / >8 hours) [d]
Demographics [e]	3 items measured: age (< 40 years / >40 years), professional background (medical / nursing / allied health), and years of clinical experience (<20 years / >20 years)
Dependent variables	**Description**
Attitudes [f]	12 PREMIS items comprised two subscales; 'Victim understanding' (attitudes about survivors) and 'Workplace issues' (attitudes about the role of the workplace). Scoring via a 7-point Likert-type scale, with some items reverse scored due to intentional negative wording
Comfort discussing DV [*]	4 items scored on a 5-point Likert-type scale measured comfort to discuss DV and sexual assault with patients ('comfortable' / 'uncomfortable')
	4 items scored on a 6-point Likert-type scale measured: 'Did not avoid issue of DV', 'Did not find DV upsetting to talk about', 'Very aware of the issue' and 'Tried to go the extra mile with patients' ('agree' / 'disagree'). Some items reverse scored due to intentional negative wording
DV inquiry [*]	1 item scored on a 5-point Likert-type scale measured frequency of asking all patients about DV ('never' / 'ever') during the previous 6 months
	5 items measured identification of 1+ new patient survivor/s ('0 new cases' / '1+ new cases') in the previous 6 months
Interventions after identifying a new DV case [*]	10 items scored on a 5-point Likert-type scale measured: risk assessment, safety planning, case file documentation, use of clinical guideline, access of DV information to give to patients, clinical discussion at team meeting and with manager, and DV referrals ('never'/'1-3+ times') during the previous 6 months
Variables used for adjustment [*]	
Age	> 40 years
Professional background	Allied health: social workers were the most common allied health professionals at this hospital and it was anticipated that they would likely have been in receipt of greater undergraduate and professional DV training
DV training	> 8 hours
Years of clinical experience	> 10 years

Notes
[a] All items/measures were made into binary variables unless otherwise noted
[b] Exposure to DV measured via Composite Abuse Scale (CAS) [16]
[c] Training also analysed as an outcome (dependent) variable
[d] Participants with no DV training were included in '<8 hours'
[e] Demographic measures based on recruitment site specific data & Australian Institute of Health & Welfare [19]
[f] Attitudes measured via PREMIS [17]
[*] Bespoke item developed for the survey based on an extensive review of the literature

Statistical analysis

Clinical interventions to identify and respond to DV were summarised using frequencies and percentages for categorical data and means and standard deviations for ordinal data. Independent *t*-tests and Chi-Square tests of comparison were used to compare mean scores. Linear regression compared differences in mean scores across exposure for attitude scores, while logistic regression was used for comfort asking about DV and clinical intervention variables. Odds ratios (ORs), 95% confidence intervals (CIs) and *P*-values were used to assess the likely size of the association between each clinical action and DV.

Data was analysed with STATA version 13.1 [20].

Patient and public involvement

No patients or the public were involved in developing the research question or outcome measures. Health professionals were involved however, and they were informed by their clinical work with survivor patients. Health professionals contributed to the research questions and overall design of the study. Results of the study will be disseminated to participants via workplace newsletter items and staff public speaking forums at the recruitment site.

RESULTS

Participant characteristics: The survey was sent to 1,047 female health professional staff and 471 participated: 366 completed the survey electronically, while 105 returned a paper version, giving a response rate of 45.0%. Most participants were nurse/midwives, aged 30-60 years, had ten or more years of experience, and were demographically representative of their non-participating peers (Table 1). Survivor health professional participants (45.2%, 212/469) were significantly more likely to be aged 30-39 years and have an allied health background compared to participants who were not survivors [1].

Table 1. Personal characteristics of participating health professionals

Characteristic	Total participants [a] (*n*=471) *n* (%)	No history of violence (*n*=257) *n* (%)	Lifetime domestic violence (*n*=212) *n* (%)	*P*-Value

Age (years)				
<30	81 (17.2)	52 (20.2)	29 (13.7)	.063
30-39	123 (26.2)	57 (22.2)	66 (31.1)	.029
40-49	100 (21.3)	54 (21.0)	46 (21.7)	.857
50-59	133 (28.3)	70 (27.2)	62 (29.2)	.630
≥ 60	33 (7.0)	24 (9.3)	9 (4.2)	.036
Health professional background				
Nursing/Midwifery	317 (67.5)	181 (70.7)	134 (63.2)	.086
Medical	69 (14.7)	38 (14.8)	31 (14.6)	.946
Allied Health	61 (13.0)	21 (8.2)	40 (18.9)	.001
Other [b]	23 (4.9)	16 (6.3)	7 (3.3)	.148
Years of clinical experience				
<5	70 (15.0)	39 (15.4)	31 (14.6)	.826
5-9	67 (14.3)	35 (13.8)	32 (15.1)	.687
10-19	119 (25.4)	62 (24.4)	57 (26.9)	.542
20-29	99 (21.2)	53 (20.9)	45 (21.2)	.924
≥30	113 (24.2)	65 (25.6)	47 (22.2)	.390
Participants who supervise other staff	226 (48.2)	122 (47.8)	102 (48.1)	.954
Adult intimate relationship (ever) [c]	431 (92.9)	222 (88.1)	209 (98.6)	<.01

Notes
[a] Denominators vary due to missing responses. Maximum missing data *n*=3 (0.6%)
[b] Health professionals working in a clinical role not already specified, ie. Imaging, Pharmacy
[c] 33 participants were omitted from relationship questions because they had never been in a relationship

Training and preparedness: Survivor health professionals were more likely to have received one or more days of DV training (adj OR 1.9, 95% CI 1.2-3.2) and to report more sensitive attitudes about DV survivors (adj. coef. 0.2, 95% CI 0.1-0.4) compared to their colleagues who had not experienced DV. Survivor health professionals were no more likely than others to find it upsetting to talk about DV with their patients (adj OR 0.8, 95% CI 0.5, 1.1) (Table 2). Irrespective of whether a health professional had experienced DV, having undertaken at least one day of DV training was positively associated with good clinical care, including identifying survivor patients (adj OR 9.6, 95% CI 5.0, 18.8), risk assessment (adj OR 4.6, 95% CI 2.2, 9.5), safety planning (adj OR 4.3, 95% CI 2.1, 8.9) and referral (adj OR 2.1, 95% CI 1.0, 4.1). This finding occurred even after adjustment for possible confounders (Table 3). Univariate analysis suggested a positive association between hours of DV training and asking patients about the issue. The analysis also suggested that allied health professional participants (i.e. social workers) were more likely to have had 1+ days of DV training and to have safety planned and referred survivor patients than other professional groups (Table 3).

Table 2. Health professional's personal exposure to DV and their clinical practice

	Lifetime abuse by partner/family

	All participants (*n*=471) [a]	*member* *No abuse* (*n*=257)	*member* *Abuse* (*n*=212)	Unadjusted	Adjusted [b]	*P*
		n (%)		*OR (95% CI)*		
Training (1+ days)	94 (20.1)	36 (14.1)	58 (27.4)	2.3 (1.4, 3.6)	1.9 (1.2, 3.2)	.007
Preparedness for practice		*Mean (s.d.)*		*Coef (95% CI)*		
Attitudes about survivors	5.1 (1.0)	4.9 (1.0)	5.3 (0.9)	0.3 (0.2, 0.5)	0.2 (0.1, 0.4)	.009
Attitudes about the role of health services	4.4 (1.1)	4.3 (1.0)	4.4 (1.2)	0.1 (-0.1, 0.3)	-0.1 (-0.3, 0.1)	.550
		n (%)		*OR (95% CI)*		
Recent clinical practice [c]	(*n*=422)	(*n*=226)	(*n*=194)			
Comfort discussing DV	194 (46.0)	94 (41.6)	99 (51.0)	1.5 (1.0, 2.2)	1.1 (0.7, 1.7)	.578
Comfort discussing sexual assault	165 (39.0)	77 (34.1)	87 (44.8)	1.6 (1.1, 2.3)	1.2 (0.8, 1.8)	.455
Did not avoid issue of DV	254 (61.9)	93 (42.5)	62 (32.8)	1.5 (1.0, 2.3)	1.3 (0.8, 2.0)	.232
Did not find upsetting to talk about	229 (55.8)	127 (56.0)	102 (54.0)	0.8 (0.6, 1.2)	0.8 (0.5, 1.1)	.186
Very aware of the issue	220 (54.3)	107 (50.0)	111 (59.0)	1.4 (1.0, 2.1)	1.2 (0.8, 1.8)	.399
Tried to go the extra mile with patients	181 (44.5)	84 (38.7)	95 (50.3)	1.6 (1.1, 2.4)	1.3 (0.9, 2.0)	.205
DV inquiry						
Inquiry of 1+ patient/s	260 (61.6)	124 (54.9)	134 (69.1)	1.8 (1.2, 2.7)	1.5 (1.0, 2.3)	.074
Identified 1+ new cases	193 (45.7)	91 (40.1)	101 (52.3)	1.6 (1.1, 2.4)	1.3 (0.8, 2.0)	.263
Intervention/s with survivor patients [d]	(*n*=193)	(*n*=91)	(*n*=101)			
Risk assessment	102 (53.7)	41 (46.1)	60 (60.0)	1.8 (1.0, 3.1)	1.2 (0.6, 2.4)	.501
Safety planning	80 (41.7)	28 (31.1)	52 (51.5)	2.3 (1.3, 4.2)	1.6 (0.8, 3.2)	.208
Case file documentation	139 (72.4)	63 (70.0)	75 (74.3)	1.2 (0.6, 2.3)	1.1 (0.5, 2.2)	.786
Utilised DV Clinical Practice Guideline	76 (40.0)	37 (41.1)	38 (38.4)	0.9 (0.5, 1.6)	0.7 (0.4, 1.4)	.363
Accessed DV information	60 (31.4)	22 (24.4)	37 (37.0)	1.8 (1.0, 3.4)	2.0 (1.0, 4.0)	.040
Discussed DV at a team meeting	125 (66.1)	56 (62.2)	68 (69.4)	1.4 (0.7, 2.5)	1.2 (0.6, 2.3)	.542
Discussed a DV case with manager	146 (76.4)	66 (74.2)	79 (78.2)	1.2 (0.6, 2.4)	1.1 (0.5, 2.3)	.751
DV referrals						
Internal hospital service	166 (86.0)	78 (85.7)	87 (86.1)	1.0 (0.5, 2.3)	1.0 (0.4, 2.5)	.960
Community DV service	78 (40.6)	30 (33.3)	48 (47.5)	1.8 (1.0, 3.3)	1.3 (0.7, 2.7)	.387

Notes:
[a] Denominators vary due to missing values, maximum missing values *n*=19 (4.0%)
[b] Adjusted for age (40+ years), profession (social work), years of clinical experience (10+ years), training (1+ days)
[c] During the last 6 months. 48 participants were excluded from the remaining analyses because they had not been in clinical practice
[d] 277 participants were excluded from analyses (229 participants who had not identified a new DV case & 48 participants not in clinical practice)

Identifying survivor patients: In the unadjusted analysis, being a survivor health professional was associated with asking patients about DV during the previous six months and motivation 'to go the extra mile' with them. However, in the adjusted analysis a between-group difference did not remain, although the significance level for asking patients about DV was approaching .05 (adj OR 1.5, 95% CI 1.0, 2.3, *p*.07) (Table 2).

Clinical care: Of the 193 participants who identified a survivor patient in the last six months, the unadjusted results indicated that survivor health professionals were more likely than others

to have provided DV information to patients, conducted risk assessments, safety plans, and made referrals to services (Table 2). However, in the adjusted analysis, the only association that remained was accessing DV information for patients (adj OR 2.0, 95% CI 1.0-4.0).

Table 3. The effect of training on clinical practice

	All participants (*n*=471) [a]	*Length of training* < 1 day (*n*=375)	1+ day (*n*=94)	Unadjusted	Adjusted [b]	*P*
		n (%)		*OR (95% CI)*		
Demographics						
Age						
<40 years	204 (43.4)	169 (45.2)	33 (35.1)	0.7 (0.4, 1.0)	0.6 (0.3, 1.1)	.090
>40+ years	266 (56.6)	205 (54.8)	61 (64.9)	1.5 (0.9, 2.4)	1.8 (0.9, 3.4)	.090
Professional background						
Nursing/midwifery	317 (67.5)	268 (71.7)	48 (51.1)	0.4 (0.3, 0.6)	0.4 (0.2, 0.6)	.000
Medical	69 (14.7)	55 (14.7)	13 (13.8)	0.9 (0.5, 1.8)	0.9 (0.5, 1.8)	.816
Allied Health	61 (13.0)	31 (8.3)	30 (31.9)	5.2 (2.9, 9.1)	5.3 (3.0, 9.4)	.000
Years of clinical experience						
< 20 years	256 (54.7)	207 (55.6)	47 (50.0)	0.8 (0.5, 1.2)	0.6 (0.3, 0.9)	.028
> 20+ years	212 (45.3)	165 (44.3)	47 (50.0)	1.2 (0.8, 2.0)	1.7 (1.1, 2.9)	.028
Supervision of other staff	226 (48.2)	175 (46.9)	49 (52.1)	1.2 (0.8, 1.9)	1.7 (1.0, 2.9)	.038
Preparedness for practice		*Mean (s.d.)*		*Coef (95% CI)*		
Attitudes about survivors	5.1 (1.0)	4.9 (1.0)	5.8 (0.7)	0.9 (0.6, 1.1)	0.8 (0.6, 1.1)	.000
Attitudes about the role of health services	4.4 (1.1)	4.2 (1.0)	5.0 (1.2)	0.8 (0.6, 1.1)	0.7 (0.4, 0.9)	.000
		n (%)		*OR (95% CI)*		
Recent clinical practice [c]	(*n*=422)	(*n*=336)	(*n*=84)			
Comfort discussing DV	194 (45.9)	125 (37.1)	68 (80.9)	7.2 (4.0, 13.0)	6.4 (3.5, 11.8)	.000
Comfort discussing sexual assault	165 (39.0)	104 (30.9)	61 (72.6)	5.9 (3.5, 10.1)	5.1 (2.9, 8.9)	.000
Did not avoid issue of DV	254 (61.9)	190 (58.5)	63 (75.9)	2.3 (1.3, 3.9)	2.2 (1.2, 3.9)	.008
Did not find upsetting to talk about	229 (55.8)	173 (53.2)	54 (65.1)	1.6 (1.0, 2,7)	1.6 (0.9, 2.7)	.095
Very aware of the issue	220 (54.3)	149 (46.4)	70 (85.4)	6.7 (3.5, 12.9)	7.0 (3.5, 13.7)	.000
Tried to go the extra mile with patients	181 (44.5)	118 (36.5)	62 (75.6)	5.4 (3.1, 9.3)	5.0 (2.8, 8.9)	.000
DV inquiry						
Inquiry of 1+ patient/s	260 (61.6)	178 (53.0)	81 (96.4)	24.0 (7.4, 77.4)	24.1 (7.3, 78.8)	.000
Identified 1+ new cases	193 (45.7)	121 (35.9)	71 (85.5)	10.6 (5.5, 20.2)	9.6 (5.0, 18.8)	.000
Intervention/s with survivor patients [d]	(*n*=193)	(*n*=121)	(*n*=71)			
Risk assessment	102 (53.7)	47 (39.5)	54 (77.1)	5.2 (2.6, 10.1)	4.6 (2.2, 9.5)	.000

Safety planning	80 (41.7)	31 (25.8)	48 (67.6)	6.0 (3.1, 11.4)	4.3 (2.1, 8.9)	.000
Case file documentation	139 (72.4)	76 (63.3)	62 (87.3)	4.0 (1.8, 8.8)	3.4 (1.5, 7.8)	.004
Utilised DV Clinical Practice Guideline	76 (40.0)	32 (26.9)	43 (61.4)	4.3 (2.3, 8.1)	4.2 (2.1, 8.3)	.000
Accessed DV information	60 (31.4)	32 (26.7)	27 (38.6)	1.7 (0.9, 3.2)	1.7 (0.9, 3.4)	.120
Discussed DV at a team meeting	125 (66.1)	69 (59.0)	55 (77.5)	2.4 (1.2, 4.7)	2.4 (1.1, 5.0)	.019
Discussed a DV case with manager	146 (76.4)	82 (68.9)	63 (88.7)	3.5 (1.5, 8.2)	3.3 (1.4, 8.1)	.007
DV referrals						
Internal hospital service	166 (86.0)	97 (80.2)	68 (95.8)	5.6 (1.6, 19.4)	6.4 (1.7, 23.6)	.005
Community DV service	78 (40.6)	35 (29.2)	42 (59.1)	3.5 (1.9, 6.5)	2.1 (1.0, 4.1)	.042

Notes:
[a] Denominators vary due to missing value. Maximum missing data *n*=3 (1.5%), unless otherwise specified
[b] Adjusted for age (40 years and older), profession (social work) and years of clinical experience (10 or more years)
[c] During the last 6 months. 48 participants were excluded from the remaining analyses because they had not been in clinical practice
[d] 277 participants were excluded from analyses (229 participants who had not identified a new DV case & 48 participants not in clinical practice)

DISCUSSION

These findings provide evidence that survivor health professionals may be doing more of the work seen as better clinical care of survivor patients than those without personal experience. Being a survivor health professional was significantly associated with uptake of DV training, more sensitive attitudes about survivors and a higher likelihood of having accessed DV information to give to survivor patients, which supports the hypothesis that survivor health professionals would demonstrate more sensitive attitudes about survivors compared to their non-abused peers. There was only partial support for the hypothesis that survivor health professionals would recall providing more DV interventions to survivor patients since the only significant association was having accessed more DV information for patients. However, the hypotheses that survivor health professionals would feel more comfortable discussing DV with their patients, ask more patients about DV, and identify more survivors within a six-month period, were not supported after adjusting for age, years of experience and training. It is notable that survivor health professionals asked more patients about DV at a level approaching significance.

Strengths & limitations

Strengths of this study include adjustment for potential confounders in regression [7 8 11 13 14], the inclusion of health professionals from all clinical backgrounds reflected in hospitals [7 8 10-14],

and the recruitment of primary DV survivors [9 11 13 14]. Limitations of this study include self-report and social desirability which may have led to under-reporting of abuse, and the single recruitment site that prevents generalisability of findings [21 22]. It is possible that DV survivors were more motivated to participate in the project than other people [21], and we acknowledge the possibility that non-respondents may have differed from respondents in a way that affected our conclusions. Considerable attempts were made to address selection bias by active recruitment and strong encouragement to participate; a 45.0% response rate was achieved. Despite the sample limitations, considering the work demands of our participants and the representational participation of nurses, doctors and allied health professionals, we argue that our response rate is acceptable and comparable to similar research [7 8].

The study in the context of other studies

The findings of an association between a health professional's history of DV and aspects of clinical care of survivor patients echoes other research [7 14]. A possible interaction between DV training, personal experience and clinical care has been suggested previously [9]. However, the finding in this study of a relationship between a health professional's history of DV and their participation in training is critical and new. This finding was surprising; we did not posit a hypothesis about survivors accessing more hours of professional training. We suggest that survivor health professionals may be more likely to attend training because they understand the issue, resultant impact on health and the need for timely responses, and/or they are seeking information or validation about their own experience.

The association between being a survivor health professional, holding more sensitive attitudes about survivors and providing DV information to patients is consistent with one previous study [14]. This small study examined nurses' thoughts, feelings and proposed actions in response to identifying survivor patients, finding an association between being a survivor nurse and having more sensitive, empathetic responses to survivor patients [14]. Our study extends these findings since that analysis did not adjust for potential confounders and the exposure group included health professional participants with secondary exposure to DV through friends/family. We postulate that survivor health professionals may hold more sensitive attitudes about survivors and fewer misconceptions about DV because of empathy stemming from a shared trauma

experience. Additionally, they may be more likely to access DV information for their patients because they believe that DV awareness is an important intervention in itself.

Implications

Given the association between being a survivor health professional and attendance at DV training, this should be regarded when developing and delivering DV training for health professionals [7]. Such training could incorporate reflection, safety information, emotional health psychoeducation, referral, workplace support, and promoting a safe and supportive healthcare workplace [15 23]. More broadly, these findings provide evidence that survivor health professionals are an asset to the organisations in which they work since among the participants in this study, they appear to be doing more of the work seen as better clinical care of survivor patients. This finding rebukes the misconception that women who have experienced DV are enduringly vulnerable, a distortion which can encourage women to remain women silent, especially at work, for fear of how they might be regarded if they speak up [24]. This study presents an opportunity for health services to explore how the lived experience of DV for both their patient *and* staff survivors could inform and improve their service. A past critique of health and other "mainstream" DV response services has been that they have not meaningfully consulted survivors [25]. Listening to the experiences and needs of survivor health professionals may enhance the support those health professionals feel from their employer, strengthening their personal and professional capacity as they care for patients. There is evidence that accessing support for DV can result in meaningful change in survivors' lives, including in their employment [18]. We argue the need for greater workplace supports aimed at promoting safety and recovery from violence and strengthening clinical practice with patients. This requires organisational leadership, evidence-based response guidelines and resourced individuals to whom a disclosure can be made and who can provide varied levels of support (resource information, clinical debriefing, longer term emotional support) [1]. Trauma-informed care may provide a useful framework to guide the response of hospitals towards better supporting staff *and* patient DV survivors [26]. A trauma-informed system is one in which all components have been organised with the understanding that trauma is a centralising influence in survivor's lives, and organisational, operational and clinical practice should prioritise safety, control and the recovery trajectory [27]. More research is required to better understand the impact of DV

workplace supports for DV on health professional women's wellbeing and clinical care. This study sheds light on the survivor experience, especially for women at work.

Conclusion

This research demonstrates that health professionals with a lived experience of domestic violence attend more training aimed at improving clinical care of survivor patients, self-report more sensitive attitudes about survivors and access more DV information for patients after disclosure. This suggests that DV is not a barrier, and may be a facilitator, to clinical care of survivor patients. Healthcare workplaces should take account of this in their response to survivor health professionals, the development of DV training offered to staff, clinical care policies with patients and workplace supports.

DECLARATIONS

Ethics approval and consent to participate

Ethics approval was provided by both the recruiting hospital and a University Human Research and Ethics Committee (Ethics ID: 1339986, dated 10 May 2013). Consent to participate was implied through completed and returned surveys.

Consent for publication

Not applicable.

Availability of data and materials

At present, the data and materials (survey) are not publicly available but can be obtained from the authors upon request. The Composite Abuse Scale and Physician Readiness to Manage Intimate Partner Violence Survey are publicly available [16 17].

Competing interests

The authors declare that they have no competing interests.

Funding

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Authors' contributions

This manuscript is part of the doctoral work of EM. EM, KH and CH participated in the design of the study. EM was primarily responsible for all aspects of the work, including data collection and analysis, with KH contributing significantly to data analysis. EM, KH and CH were all responsible for interpretation of the findings. EM wrote the manuscript, with important contributions during many reviews by KH and CH. All authors read and approved the final manuscript.

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STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	1
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	1
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2-3
Objectives	3	State specific objectives, including any prespecified hypotheses	3
Methods			
Study design	4	Present key elements of study design early in the paper	3
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	3
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	3
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	4
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	4
Bias	9	Describe any efforts to address potential sources of bias	6
Study size	10	Explain how the study size was arrived at	6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	4
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	4
		(*b*) Describe any methods used to examine subgroups and interactions	N/A
		(*c*) Explain how missing data were addressed	7-8 specify the number and percentage of missing data. Since less than 5% of the

			data was missing, we employed the '95% rule' which says that 'different treatments of missing values will have little or no impact on the substantive interpretations as 95 per cent of the observations are available for use'
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(*e*) Describe any sensitivity analyses	N/A
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	5
		(b) Give reasons for non-participation at each stage	5
		(c) Consider use of a flow diagram	We are happy to add this if the reviewers would like it
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	10
		(b) Indicate number of participants with missing data for each variable of interest	10-13
Outcome data	15*	Report numbers of outcome events or summary measures	N/A
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	4-5
		(*b*) Report category boundaries when continuous variables were categorized	N/A
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	N/A
Discussion			
Key results	18	Summarise key results with reference to study objectives	5-6

Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	6
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	5-7
Generalisability	21	Discuss the generalisability (external validity) of the study results	7
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	9

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.