

New England, USA dental professionals' attitudes and behaviours regarding domestic violence

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IN BRIEF

- Dentistry's role in recognising and reporting in cases of abuse or neglect has a strong association to early prevention of trauma in abused patients.
- Less than half of the surveyed dental professionals screen for domestic violence.
- Domestic violence education should be included in the regular curricula of dental and hygiene schools and continuing education courses should be developed and promoted.

Background The aim of this study was to describe New England dental professionals' attitudes and behaviours regarding domestic violence (DV) and to identify barriers faced in intervening to help suspected victims. **Methods** A cross-sectional survey using a convenience sample of dentists (n = 169) and hygienists (n = 190) attending the 2004 Yankee Dental Conference in Boston, MA was conducted. Data were collected using a questionnaire assessing screening practices, actions taken, deterrents in identification and referral, prior DV education and perceived need for DV education. Descriptive, bivariate and multivariate analyses were performed. **Results** Dentists and hygienist were very similar in their attitudes and behaviours regarding DV. Dental professionals who had received prior DV education were more likely to screen for DV ($p \leq 0.0001$) and to take action when DV was suspected ($p = 0.0006$) compared to those who had not received prior DV education. **Conclusions** Results indicate a need for DV education for dental professionals to improve abuse recognition and enhance intervention.

BACKGROUND

Domestic violence (DV) is as any violent behaviour directed against an individual within the home or family and includes abuse of children, spouses, the elderly, the disabled, intimate partner abuse and a combination of these forms. Abuse can be seen not only as physical abuse but in various other forms such as sexual, emotional, financial and verbal abuse and neglect. Domestic violence, regardless of its type, has long been recognised as an epidemic in Western society.^{1,2} One in four US families are reported to have experienced some form of violence.² Various studies, primarily North American, show a strong association between head, neck and facial (HNF) injuries and

DV victims.³⁻⁶ In a 1996 study, Ochs *et al.*⁴ found that patients who came to the emergency room with HNF injuries were 7.5 times more likely to be victims of DV than were individuals who sought treatment for other injuries. Despite the high association between HNF injuries and DV, dentists and hygienists report less than 1% of all abuse cases.⁷⁻¹⁰ This finding is particularly troubling since most injuries in DV are found in the head and neck area, the area which is clearly visible to the dental team.

Although it is a widespread problem and affects an estimated six million people in the United States, the reporting rate of adult DV is low compared to its actual prevalence.¹¹ There are multiple reasons why the reporting rate by oral health providers is so low. Love *et al.*¹² suggest that one of the barriers to reporting by dentists is their lack of training in recognising the clinical signs and symptoms of abuse. Estimates of DV range widely because of inconsistent diagnosis and reporting. In addition the lack of clearly defined signs and symptoms of DV makes the diagnosis difficult, and the stigma associated with it may

lead to under-reporting.^{4,13} In a survey of 407 Colorado dentists, McDowell *et al.*¹⁴ showed disparities between dentists who were suspicious that one of their patients had been a victim of abuse and the actual number who reported their findings. They found that nearly one fourth of the responding dentists did not know how to report any type of suspected abuse. Finally, concerns about possible entanglement in extensive legal proceedings is another factor in under-reporting of suspected abuse or neglect. While health-care providers in all American states are mandated by law to report suspected cases of child abuse,⁸ only Connecticut, Florida, Iowa, and New York required dental professionals to have training.¹⁵

With the escalation of violent behaviour in all segments of society regardless of ethnicity or socio-economic status, dentistry's role in recognising, reporting and intervening in cases of abuse or neglect has a strong association with early prevention of the injuries and trauma in abused patients or suspected cases of DV.^{5,14,16-18} This highlights the need for increased awareness and updated knowledge of DV for all dental

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professionals. Thus, the aim of this study was to describe New England dental professionals' attitudes and behaviours regarding domestic violence (DV) and to identify barriers faced in intervening to help suspected victims.

MATERIALS AND METHODS

This cross-sectional study utilised a convenience sample of dentists and hygienists attending the 2004 Yankee Dental Conference in Boston, Massachusetts. The majority of the participants were practising dental professionals from Massachusetts, with others from Rhode Island, Connecticut, New Hampshire, Vermont, Maine and New York. Dentists and hygienists were identified using their colour-coded nametags as possible participants and recruited when they stopped by or visited the booths where the survey was administered. The survey was administered at the following exhibition booths: Boston University Continuing Education, Boston University Alumni booth, The Oral Cancer Coalition, Delta Dental of Massachusetts, Massachusetts Dental Society and Zila Pharmaceuticals, after seeking permission from the vendors.

The survey instrument was developed using the available DV literature¹⁹ and covered basic demographics such as gender, graduation date and state of practise, along with structured and open-ended questions covering four broad sections: DV screening practices (four questions); actions taken when DV suspected (four questions); deterrents to DV identification and referral (five questions); and prior DV education and perceived need for DV education. The responses to the majority of the questions were scaled on a three-point Likert scale: 'often/always'; 'sometimes'; and 'never'. The questionnaire was pre-tested (n = 10) for face validity, ease of administration and readability on dentists and hygienists working at the Boston University Goldman School of Dental Medicine. The study was approved by Boston University Institutional Review Board.

Data management

The surveys were coded and the data were entered and cleaned using Epi Info

Table 1 Overall and stratified dental professionals' domestic violence awareness and behaviours

Variables	Overall n = 359	Dentists n = 169	Hygienists n = 190	p-value
Prior DV education:				
History of prior DV education	57%	54%	60%	0.2
Received DV education at School	52%	46%	58%	0.10
Received DV education in CE	78%	84%	74%	0.12
Need for DV education:				
Need more education regarding DV	82%	75%	87%	0.004*
DV education added to the curriculum	96%	95%	96%	0.76
Screening practises:				
Screen new patients for DV	48%	49%	48%	0.87
Screen returning patients for DV	45%	46%	45%	0.88
Screen for DV when HNF injuries are present	65%	66%	64%	0.69
Screen for DV when multiple injuries are present	65%	66%	63%	0.55
Suspected patient to be DV victim	46%	47%	44%	0.63
Actions taken when DV suspected:				
Made note in chart	78%	74%	81%	0.29
Told patient concerned for safety	69%	75%	63%	0.15
Referred patient to social services	49%	57%	42%	0.08
Gave patient info about shelters	43%	45%	41%	0.63
Deterrents in identification and referral:				
Lack of training in identifying victims	84%	80%	88%	0.04*
Concern about offending patient	82%	81%	84%	0.52
Patient accompanied by someone	77%	75%	79%	0.49
Embarrassment in bringing up the topic	75%	76%	74%	0.76
Concern about legal issues	74%	73%	75%	0.75

*Statistically significant

Table 2 Bivariate and multivariate logistic regression analysis for variables with significant results in bivariate analyses

Dependent variable*	Crude analysis			Adjusted analysis**		
	OR	95% CI	p-value	OR	95% CI	p-value
Familiarity with state regulations	1.85	(1.23-2.94)	0.003*	2.95	(1.35-6.53)	0.007*
Lack of training	0.53	(0.28-0.99)	0.04*	0.42	(0.17-1.01)	0.05*
Need more DV education	0.45	(0.26-0.78)	0.004*	0.38	(0.16-0.90)	0.02*

*Statistically significant

**Controlled for gender, state of practise, years since graduation and history of prior DV education

Version 3.2. The responses for screening practises, actions taken when DV was suspected and deterrents in identification and referral were scaled on a three-point Likert scale. Variables were dichotomised by combining the responses for 'some-

times' and 'often/always' as a yes (1) and responses for 'never' as no (0). Three new variables were created for the questions addressing screening practises, actions taken when DV was suspected and deterrents in identification and referral, by

Table 3 Multiple linear regression model predicting screening practises

Independent variables	Parameter estimate	Standard error	p-value
Intercept	1.93	0.49	0.0001
Dentist/Hygienist	-0.52	0.47	0.2
Male/Female	0.05	0.52	0.9
MA practice/Other	0.2	0.32	0.5
Years since graduation	0.005	0.01	0.6
History of prior DV education	2.4	0.32	<0.0001*

*Statistically significant

Table 4 Multiple linear regression model predicting actions taken when DV was suspected

Independent variables	Parameter estimate	Standard error	p-value
Intercept	2.16	0.64	0.001
Dentist/Hygienist	-0.23	0.59	0.7
Male/Female	-0.16	0.65	0.8
MA practice/Other	0.03	0.41	0.9
Years since graduation	0.01	0.01	0.5
History of prior DV education	1.54	0.43	0.0006*

*Statistically significant

Table 5 Multiple linear regression model predicting deterrents in identification and referral

Independent variables	Parameter estimate	Standard error	p-value
Intercept	5.77	0.52	<0.0001
Dentist/Hygienist	0.46	0.48	0.3
Male/Female	-0.05	0.53	0.9
MA practice/Other	-0.10	0.34	0.7
Years since graduation	-0.01	0.01	0.4
History of prior DV education	0.005	0.34	0.9

*Statistically significant

adding the responses to the sub-questions for each of the sections. For the questions on screening practises and actions taken when DV was suspected, there were four sub-questions for each and therefore the scale ranged from 0 to 8. The question on deterrents in identification and referral contained five sub-questions and therefore the scale ranged from 0 to 10. State of practise was also dichotomised into Massachusetts practitioners *versus* others.

Data analysis

Epi Info version 3.2 was used to perform descriptive statistics including

frequencies and means to describe the demographics of the study population and distribution of responses to all survey questions. Data were then exported into SAS version 8.2 where bivariate analysis and multivariate analyses were performed.

Bivariate analysis evaluated the differences between dentists and hygienists in their screening practises, actions taken when DV was suspected, deterrents in identification and referral and perceived need for education (Table 1). Differences in demographics, history of prior DV education and familiarity

with state and professional organisation regulations were also evaluated. Chi-square analysis for categorical data was performed and Mantel-Haenszel odds ratios calculated. In instances where cell sizes were small, Fisher's exact test was used. For continuous variables such as years since graduation, the difference in mean years since graduation was evaluated using the two sample t-test. A p value of 0.05 or less was considered to be significant.

For those items of the questionnaire in which differences between dentists and hygienist were seen in the bivariate analyses, multivariate logistic regression analyses were performed to examine whether the differences remained after controlling for independent variables such as gender, years since graduation, state of practise and history of prior DV education (Table 2).

Multiple linear regression was performed (Tables 3-5). The dependent variables were the new variables created to predict screening practises, actions taken when DV was suspected and deterrents in identification and referral, as these were treated as continuous variables. The independent variables were the same as those used in multivariate logistic models: profession, gender, years since graduation, state of practise and history of prior DV education.

RESULTS

The majority (over 90%) of the attendees approached to participate in the study agreed, resulting in a total of 359 attendees completing the questionnaire. Forty-seven percent of the participants were dentists and 53% dental hygienists. Dentists were more likely to be male (72%) while almost all of the hygienists were female (99.3%). Fifty-four percent of the study respondents were practising professionals from Massachusetts, and the average years since graduation for dentists was 8.9 ± 12.1 years, and for hygienists was 16.4 ± 11.4 years.

Overall descriptive and bivariate analysis results comparing dentists and hygienists are reported in Table 1. Fifty-seven percent of the dental professionals reported having had prior DV education, with 52% receiving it in dental or hygiene school and 78% receiving it

in continuing education (CE). Dentists were more likely than hygienists to have received DV education in CE courses rather than in dental school, however no statistically significant differences were seen between dentists and hygienists in prior DV education. Eighty-two percent of the subjects reported a need for more education regarding DV. Almost all of the respondents (96%) felt that DV education needed to be added to the regular dental/hygiene school curriculum. A statistically significantly higher percent of hygienists (87%) reported need for more DV education as compared to 75% of dentists ($p = 0.004$).

More of the study population (53%) was familiar with state regulations regarding DV than with their professional organisation (ADA/ADHA) regulations (38%). A statistically significantly higher percentage (62%) of dentists reported being familiar with state regulations regarding DV as compared to hygienists (46%), with a p -value of 0.003. However, no differences were seen in familiarity with their professional organisation regulations.

Dentists and hygienists were more likely to screen for DV when head, face and neck or multiple injuries were present (65%), than for new (48%), returning (45%), or patients suspected to be a DV victim (46%). No statistically significant differences were seen between dentists and hygienists in their screening practises.

The most common action taken when a patient was identified to be a victim of DV was making a note in the patient's chart and observing over time (78%), followed by expressing concern about their patient's safety (69%). Less than half the dentists and hygienists referred the patient to social services (49%) or gave patients information about shelters (43%). Again, no statistically significant differences were seen between dentists and hygienists in actions taken when DV was suspected.

Most of the respondents (over 74%) reported deterrents to identification and referral of DV victims. The most frequently reported deterrents were lack of training in identifying victims (84%), followed by concern about offending the patient (82%), patient being

accompanied by someone (77%), embarrassment in bringing up the topic (75%) and concern about legal issues (74%). The only statistically significant difference ($p = 0.04$) was that more hygienists (88%) reported lack of training to be a major factor in identification and referral of suspected DV victims compared to 80% of dentists.

Table 2 shows the results for multiple logistic regression analysis (both crude and adjusted) for those variables that were significant in the bivariate analyses. Profession (dentists *vs* hygienist) was the main independent variable of interest. These analyses were controlled for gender, years since graduation, state of practise and history of prior DV education. When asked about familiarity with state regulations, dentists were almost three times more likely to be familiar with state regulations compared to hygienists. Dentists were 0.42 times less likely to consider lack of training as a deterrent in identification and referral, and 0.38 times less likely to report need for more DV education as compared to hygienists.

The linear regression models predicting screening practises (Table 3) and actions taken when DV was suspected (Table 4) show that history of prior DV education was the only significant variable in these models. Those respondents who had received prior DV education were more likely to screen for DV in their patients ($p < 0.0001$) and more likely to take action when DV was suspected in one of their patients ($p = 0.0006$). As seen in Table 5, none of the tested variables predicted deterrents faced in identification and referral of suspected DV cases. There were also no differences seen by gender, state of practise and years since graduation in any of the models (Tables 3-5).

DISCUSSION

The present study evaluated domestic violence attitudes and behaviours such as screening practises, actions taken, deterrent to identification and referral and need for training in domestic violence, in New England dental professionals, and is the first to evaluate differences in behaviours between dentists and hygienists. While prior studies

have described the experiences of either dentists or hygienists exclusively, this study formally tested different practises and perceptions between these two oral health professional groups.

The results show that less than half of the surveyed dental professionals screen for domestic violence, with screening occurring more frequently when head, neck and face or multiple injuries are present, but even then only one out of three dental professionals screened for DV. Less than half referred the patient to social services or gave patients information about shelter, even when they suspected a patient to be a victim of domestic violence. Although not stellar, these results, however, are better than those reported by Love *et al.*¹² where only 13% of the responding dentists screened either new or returning patients for DV. In contrast, our study population was less likely to screen even when the patients had visible signs of trauma compared to Love *et al.*¹² There is no reason why the dental professional cannot be more proactive and ask a screening question, such as 'Do you feel safe at home?' of their patients, similar to that being asked by the nursing profession.

Three out of four dental professionals reported barriers to intervening on behalf of the victim such as lack of training in identifying victims, concern about offending the patient, patient accompanied by someone, embarrassment in bringing up the topic and concern about legal issues. The deterrents or barriers reported are similar to those reported in other studies^{7,12,14} and are an opportunity for the dental profession to intervene on behalf of their patients. With appropriate training, dental professionals can overcome some of these barriers to intervening on behalf of their patient.

A major finding in this study was that having a history of prior DV education made a significant difference in the screening practises and actions taken when DV was suspected by dental professionals, with those professionals who had received education about DV in dental or hygiene school or continuing education courses being more likely to screen for DV and to take action

when DV was suspected. A similar finding was also reported by Love *et al.*¹² Studies by Warburton *et al.*²⁰ and Hsieh *et al.*²¹ reported changes in knowledge, attitudes and behaviours of dental staff about DV after training. These findings suggest that more states should mandate training in DV for healthcare professionals. This is compatible with our study's results where the majority of the respondents reported need for updated knowledge regarding DV and more than 90% of both dentists and hygienists recommended that DV education should be a part of the regular school curriculum. Given that validated models already exist, such as the AVDR (Asking, Validating, Documenting, Referring) tutorial using computer-based interactive multimedia,²¹ that have demonstrated increase in knowledge, attitudes and behaviours, dental professionals and dental schools should be encouraged to implement these in their curricula.

As expected, few differences were seen between dentists and hygienists in their attitudes and behaviours regarding DV. Recognising the public health consequences of DV and taking the opportunities to recognise abuse and intervene are important ethical roles for both dentists and hygienists, which would greatly impact on early detection and prevention of trauma and injuries. It is, therefore, important to involve and encourage all dental professionals, not only in the United States but also worldwide, to seize the opportunity and make a more substantial difference in their patients' lives, especially for those patients who lack the resources or knowledge to intervene on their own.

Some of the limitations of this study are selection bias and generalisability. As a cost effective way to carry out the survey, it was administered at a conference to capture readily available dental professionals. Because this study used a convenience sample and the participation was voluntary, there is a possibility of over-estimation of the results because those who were willing

to participate might have been better at recognising and reporting DV than those who were not willing to take the survey. Additionally, since the Boston University Continuing Education, Boston University Alumni, The Oral Cancer Coalition, Delta Dental of Massachusetts, Massachusetts Dental Society and Zila Pharmaceuticals booths were used to administer the survey, it is possible that those dentists and hygienists that stopped at these booths were inherently different from the rest of the attendees that did not stop at these booths. Therefore, the results of this study may not be generalisable to all dentists and hygienists practising in the United States. Some possible reasons for this are that the New England practitioners could be inherently different from those practising in other states. Another reason might be that the population these practitioners serve could be more educated than others, and therefore the dental professionals practising in this area could be more current with their knowledge as compared to others. However, since some of the findings are similar to other studies conducted in the US, it leads us to believe that the results are more generalisable than not.

CONCLUSIONS

Given the study limitations reported above, the results of this study in a convenience sample of New England dentists and hygienists and previous studies done in the United States showing similar results, exemplify an increased need to update the awareness, knowledge and skills of dental professionals about domestic abuse recognition and strategies for intervention. Therefore, some recommendations to increase awareness among all dental professionals are:

- DV education should be included in the regular curricula of dental and hygiene schools
- Continuing education courses addressing the issue of family violence should be developed and promoted
- Educational programs should

approach the issue of DV as a whole rather than in fragments such as child, elderly or spousal abuse.

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