

# What variables could enhance dentists' perception of domestic violence?

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**Objectives:** Domestic Violence (DV) is a global public health problem, and dentists are in an ideal position to predict DV and aid in its prevention. The AVDR (asking, validating, documenting, and referring) model was one of the approaches developed for dentists to address DV. The objectives of this study were to identify significant variables related to dentists' attitudes toward DV and dentists' likelihood to perceive DV and to list the factors that would enhance the dentist's likelihood of perceiving DV.

**Methods:** In this cross-sectional study, a self-administered, structured questionnaire (adapted from previous studies) was used. The online survey link was emailed, with a cover message illustrating the study's context and participants' rights, to practising dentists in Jeddah, Saudi Arabia. Responses were accepted during January and February 2016. A binary logistic regression model was generated to estimate the relationship and effect of different predictors of dentists' DV perception. The Statistical Package for the Social Sciences (SPSS) version 22 was used for data analysis. Descriptive statistics, bivariate, and multivariate analyses were carried out to identify significant variables at the  $p < 0.05$  level of significance.

**Results:** One hundred and fifty-one dentists were recruited; 74.2% of the study population perceived DV and 13.2% applied the ADR approach (AVDR without validation). The multivariate model indicated that involving DV education in both dental school curricula and continuing education courses increased the odds that dentists understood DV and related acts. Female dentists had significantly higher odds of DV perception than male dentists.

**Conclusions:** DV education, dentist gender, ADR application, and previous exposure to DV in practice are the most relevant predictors of DV perception. Introducing DV in dental education and training strengthens dentists' ability to support DV victims; however, a significant difference was found between the number of dentists that perceived DV and those that applied the ADR approach.

**Key words;** *Domestic violence, violence perception, violence victims*

## INTRODUCTION

Domestic violence (DV) is an episodic, globally-underreported phenomenon where the majority of victims report several incidents (Watts & Zimmerman, 2002). Violence is a structural issue that has overlapping, multi-level components which, in turn, require formative interventions (Galtung, 1969; Farmer *et al.*, 2006). DV has a wide social component and dynamically varies over time; therefore, labelling actions and behaviours as violent or non-violent is not a simple task (Muehlenhard & Kimes, 1999). Violence can be classified as gender-based and predominantly affects females (Heise *et al.*, 1994). In addition, gender inequality increases females' vulnerability to violence (Watts & Zimmerman, 2002). Nowadays, DV is viewed as a preventable problem that can be solved through the collaboration of different political, social, health, and scientific sectors (Mercy *et al.*, 2003).

Dentists and oral surgeons have better chances of identifying DV because the face is a common DV injury site (Coulthard *et al.*, 2010). DV is one of maxillofacial fractures' aetiologies, as the face is an accessible target for perpetrators

(Chrcanovic, 2012); dental concussion, mandibular fracture, and tooth loss are the most prevalent DV injuries (Ferreira *et al.*, 2014), whereas chronic osteomyelitis of the maxilla is one of the serious complications of traumatic injuries caused by DV (Oliveira *et al.*, 2014). Additionally, the psychological impact of DV is related to poor oral health and periodontal status in victims (Kundu *et al.*, 2014). Therefore, cause identification is critical for planning and managing oral and maxillofacial complications caused by DV (Oliveira *et al.*, 2014).

Identifying violence is the first step in its prevention; therefore, oral health care providers could play a critical role in preventing violence and supporting victims (Richardson *et al.*, 2001; Kundu *et al.*, 2014); for that reason, dentists should acquire basic and advanced-level knowledge of DV (Edward & Brandt, 1997). One study investigated what DV victims needed from the dental professional; 76% of the participants had head and neck injuries, and although 89% were not asked about their injuries, almost 69% wanted to be asked (Nelms *et al.*, 2009). The AVDR (asking, validating, documenting, and referring) method was developed to help dentists address DV victims. It has been introduced as a

simple and effective intervention for dentists to manage DV victims in dental practice and prevent further abuse and subsequent associated oral trauma (Hsieh *et al.*, 2006). One of the AVDR's objectives is to provide help to the patient without imposing an obligation on the dentist to solve the problem. In the AVDR protocol, the practitioner starts by asking the patient about violence and follows that by providing the patient with a validating message to acknowledge the victim's worth. The documentation part should include the signs, symptoms, dental records, and photographs. The referral should be made to a DV specialist in the community (Hsieh *et al.*, 2006).

The objectives of this study were to identify the significant variables related to DV perception and attitudes and to list factors that would enhance the dentist's likelihood to perceiving DV.

## MATERIALS AND METHODS

### Participants and procedure

The ethical approval for this study was obtained from King Abdul-Aziz University Dental Hospital, Jeddah, Saudi Arabia. Participants were recruited electronically and a total of 151 responded. The eligibility criteria were dentists practising in Jeddah, Saudi Arabia. A web-based, self-administered, structured questionnaire (adapted from previous studies) was distributed (Love *et al.*, 2001; Mythri *et al.*, 2015). The online survey link was emailed with a cover message illustrating the study's context and the participants' rights. The study responses were accepted from January through February 2016. The questionnaire included 24

closed-ended questions that assessed participants' demographics, attitudes, and behaviours towards DV victims in clinical settings. The study population's demographics are illustrated and summarised in Table 1.

### Sampling and measurements

In this cross-sectional study, an online sample size calculator was used to estimate the sample size. The Statistical Package for the Social Sciences (SPSS) version 22 (IBM Corp., Armonk, NY, USA) was used for data analysis. Descriptive statistics were calculated and bivariate analysis carried out to identify significant variables. A multivariate model was also conducted that included only the variables that were significant predictors in the bivariate analyses. A binary logistic regression model was generated to estimate the relationship and effect of the different predictors of dentists' DV perception. All statistical analyses were set at the P-Value<0.05 level of significance and with a 95% confidence interval.

The first dependent variable, 'ADR' was formulated to measure the actual action of the participating dentists. ADR is adopted from the AVDR model (with the exclusion of validation). The score was the total positive responses out of three variables ('Asking patients about DV if suspected', 'Documentation in dental records', 'Referring DV victims and providing them with information'); if the respondent scored 3 out of 3, then the dentist was considered to be applying the model.

The second dependent variable, 'DV perception', was constructed as a score out of five variables ('Considering DV as a health care problem that necessitates dentist intervention',

Table 1: Study Population Demographics

Gender		Clinical Qualification	
Male	Female	General Practitioner	Specialized
41.70%	58.30%	69.50%	30.50%
Age (Years)			
<= 30	31 – 40	41 – 50	51 >=
61.60%	22.50%	11.90%	4.00%
Practicing Hours/Week			
8 – 16	17 – 24	25 – 32	33 – 40
23.80%	17.90%	16.60%	41.70%
Years of Clinical Experience			
< 5	5 – 10	11 – 15	16 >
57.00%	19.90%	7.90%	15.20%
Practice Setting			
Private	Governmental	Both	
18.50%	62.90%	18.50%	

**Table 2:** The Effect of the Participants' Gender

Screening Items		Female	Male	P-Value
Consider DV a health care problem necessitates dentist's intervention	Yes	89.8%	76.2%	0.02
	No	10.2%	23.8%	
Asked patients about DV when suspected	Yes	75%	57.1%	0.02
	No	25%	42.9%	
DV Documentation	Yes	83%	65.1%	0.01
	No	17%	34.9%	
Concerns About Personal Safety	Yes	61.4%	65.1%	0.64
	No	38.6%	34.9%	

'Suspecting DV when patients presented with extra-oral signs of abuse', 'Suspecting DV when patients presented with dental signs of abuse', 'The knowledge about the available shelters or hotlines', and 'Believing that dentists have a role in decreasing DV prevalence'). If the dentist scored 3 or more out of 5, then the dentist was considered to have a positive perception about DV. Additionally, four independent predictors (DV education, gender, ADR, and previous exposure to DV victims in practice) were used in the multivariate model.

## RESULTS

### Bivariate Analysis

A greater percentage of female participants (89.8%) considered DV a health care problem that necessitates the dentist's intervention, compared to 76.2% of male respondents; this difference was statistically significant (P-Value=0.02). The majority of female participants (75%) asked their patient about DV upon seeing extra-oral (head and neck) signs of violence (P-Value=0.02). Female respondents reported a higher percentage (83%) of DV documentation

than the male respondents (65.1%) (P-Value=0.01). Furthermore, the dentist's gender was not significantly related to having personal safety concerns when treating DV victims in dental settings (P-Value=0.64) (Table 2).

DV education led participants to screen more patients for DV; DV education in dental school, continuing education, and informal education led to DV screening by 52.2%, 75%, and 34.6% of dentists, respectively. This finding was statistically significant with a P-Value of 0.0001. Moreover, 54.3% of participants with no DV education asked about DV when they suspected it, compared to 82.6% who received DV education in dental school and 83.3% in continuing education (P-Value=0.003). The overall prevalence of DV documentation in the dental charts of the victims was high. Those with no DV education documented 66.7% of the encountered cases, compared to 82.6% and 91.7% for those educated about DV in dental school and continuing education, respectively (P-Value= 0.01). The percentage of victims that were provided social services information increased with additional DV education. Almost 10% of the dentists who had no DV education provided victims with information about shelters and social services, while 13%

**Table 3:** The Effect of the Participants' Education

Screening Items		Domestic Violence Education			P-Value
		None	In Dental school	In Continuing Education	
DV Screening	Yes	34.6%	52.2%	75%	0.0001
	No	65.4%	47.8%	25%	
Asked patients about DV when suspected	Yes	54.3%	82.6%	83.3%	0.0003
	No	45.7%	17.4%	16.7%	
DV Documentation	Yes	66.7%	82.6%	91.7%	0.01
	No	33.3%	17.4%	8.3%	
Provided victims with information about shelters and social services	Yes	9.9%	13%	33.3%	0.03
	No	90.1%	87%	66.7%	

and 33.3% of those educated about DV in dental school and continuing education, respectively, provided the victims with information (P-Value= 0.03) (Table 3).

The increase in clinical qualification also increased the level of DV documentation, 69.5% for general practitioners compared to 89.1% for specialised dentists (P-Value=0.0001). No significant difference was found between different practice settings and either personal safety concerns or concerns about DV documentation negatively affecting practice. However, 86.4% of practitioners who provided DV victims with information about shelters and social services had personal safety concerns (P-Value=0.00).

Only 23.9% of the participants who were previously exposed to DV victims in their practice provided them with information about shelters and social services (P-Value=0.03). Thirty-nine percent of participants who heard about DV were familiar with the available hotlines and social

services (P-Value=0.02); on the other hand, 50% of the participants who came across DV were acquainted with the available hotlines (P-Value=0.00) (Table 4).

### Multivariate analysis

In terms of ADR, only 13.2% of the total study participants applied the ADR approach when they had a DV victim as a patient in their practice (Figure 1).

Although 74.2% of the study population knew about DV (Figure 2), multivariate analyses were done to evaluate the key predictors that affected dentists' perception about DV. After controlling for potential cofounders, the results of this logistic regression indicated that DV education during undergraduate dental education increased dentists' perception of DV 2.9 times that of dentists who had no DV education. Likewise, participants who had DV education in

**Table 4:** The Effect of the Participants' Experience

Screening Items		Clinical Qualification			
		General Practitioner	Specialized	P- Value	
DV Documentation	Yes	69.5%	89.1%	0.00	
	No	30.5%	10.9%		
		Provided victims with information about shelters and social services			
		Yes	No	P- Value	
Concerns About Personal Safety	Yes	86.4%	41.1%	0.00	
	No	13.6%	58.9%		
		Previous Exposure to DV in Practice			
		Yes	No	P- Value	
Provided victims with information about shelters and social services	Yes	23.9%	10.5%	0.03	
	No	76.1%	89.5%		
Familiar with the available hotlines and social services	Yes	50%	23.8%	0.00	
	No	50%	76.2%		
		Familiar with the available hotlines and social services			
		Yes	No	P- Value	
Heard about DV in practice	Yes	39.3%	22.4%	0.02	
	No	60.7%	77.6%		
		Practice setting			
		Both	Private	Governmental	P- Value
Concerns About Personal Safety	Yes	64.3%	67.9%	61.1%	0.79
	No	35.7%	32.1%	38.9%	
Concerns About Having Negative Impact on Practice	Yes	64.3%	57.1%	50.5%	0.41
	No	35.7%	42.9%	49.5%	

Figure 1: Application of the ADR

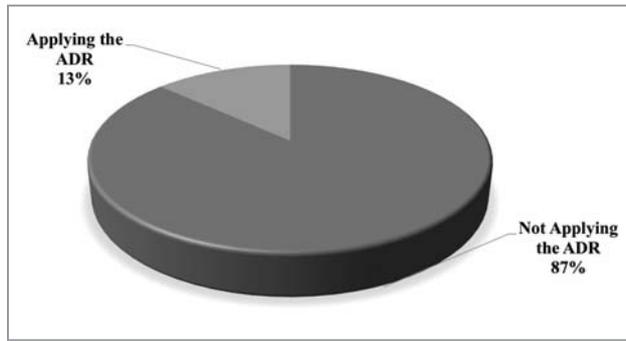
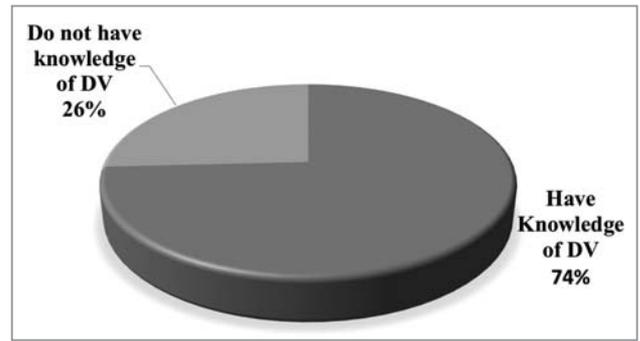


Figure 2: Domestic violence perception



their continuing educational courses were 12.2 times more likely to perceive DV than dentists with no DV education. Both findings were statistically significant at P-Values of 0.02 and 0.01, respectively. Participants who applied the ADR prevention model when DV victims were patients had 7.2 times more likely to perceive DV than dentists who did not use the ADR model, with a P-Value of 0.06. The dentists' gender is another important covariate in this logistic regression. Female dentists had 2.3-fold higher levels of DV perception than male dentists, and this difference was statistically significant (P-Value=0.03). Previous exposure to DV victims in a practice setting is another key predictor in this multivariate analysis. Dentists who were previously introduced to DV victims were 2 times more likely to perceive DV than those who had not; however, this was not significant (P-Value=0.12) (Table 5).

## DISCUSSION

DV has reached epidemic levels worldwide, and mostly females are affected (Alhabib *et al.*, 2010; Ferreira *et al.* 2014). The majority of DV victims frequently seek healthcare (Gregory *et al.*, 2010), and therefore DV represents a huge responsibility for the public health sector; therefore, health care providers should be involved in DV prediction and prevention (Alhabib *et al.*, 2010; Wolf *et al.* 2014). Dentists could be the first line facing DV victims, as the face and the skull are typical injury sites (Berrios & Grady, 1991). Therefore, dentists should be well trained in order to acquire

the knowledge and skills to manage DV (Edward & Brandt, 1997; Gibson-Howell 2008).

Almost 42% of the female victims of DV find it easier to disclose violence to a female practitioner (Richardson *et al.*, 2001). Another study showed that DV victims would equally disclose violence to male or female health care practitioners. According to the first study, the dentist's gender could be viewed as an important factor in disclosing DV cases, especially in rural areas (Usta *et al.*, 2012). In the current study, 89.8% of female participants considered DV to be a health care problem that necessitates the dentist's intervention. Furthermore, female dentists asked suspected cases and documented DV significantly more often than male dentists. Also, female dentists were 2.3 times more likely to perceive DV than male dentists; this could be attributed to the fact that domestic abuse is a gender-based violence (Charlotte Watts & Zimmerman, 2002; Alhabib *et al.*, 2010; Ferreira *et al.*, 2014).

The results of this study indicated that DV education significantly increased the levels of practitioners' screening, documentation, and referral, in agreement with other studies that reported that training on DV positively affected practitioners' knowledge, efficacy, and confidence (Lewis *et al.*, 2017). The logistic regression model showed that including DV education in dental school curricula increased the odds of DV perception by 2.6 times, whereas continuing DV education increased the dentist's perception of DV by 12.2 times. This finding suggests that education may play an integral role in DV awareness and taking action (Tilden *et al.* 1994; Alalayani & Alshouibi, 2017).

Table 5: DV Perception Logistic Regression

	Odd Ratio	Lower 95% C.I.	Upper 95% C.I.	P- Value
Dental School Education	2.916	1.157	7.347	0.02
Continuing Education	12.229	1.511	98.983	0.01
ADR	7.204	.855	60.690	0.06
Female Practitioner	2.380	1.063	5.332	0.03
Previous Exposure to Domestic Violence Victims in Practice	2.089	.813	5.368	0.12
Constant	.755	–	–	0.44

Direct questions regarding whether the patient experienced violence at home revealed a decreased prevalence of DV and some victims objected to being asked about DV (Richardson *et al.*, 2001). However, addressing DV in healthcare settings provides a professional and socially acceptable environment for victims to disclose violence (Usta *et al.*, 2012). This study found no difference between personal safety concerns and concerns about having a negative impact on different practice settings; however, 86.4% of practitioners who provided DV victims with information about shelters and social services had personal safety concerns. Both victims and healthcare providers agreed that the clinical settings are suitable for violence disclosure (Chen & Rovi, 2007).

The majority of healthcare professionals wanted to be trained to manage DV in practice (Richardson *et al.*, 2001). In this study only 23.9% participants who came across DV victims in their practice provided the victims with information about shelters and social services. DV education for dentists plays an essential role in improving their knowledge and skills. Nevertheless, practical training is further required to eliminate the risks of a practitioner's false confidence (Warburton *et al.*, 2006; Hamberger, 2007; Gibson-Howell *et al.*, 2008).

The AVDR approach was designed to help dentists to manage both suspected and disclosed DV cases (Hsieh *et al.*, 2006). Although 74.2% of the study population perceived

DV, only 13.2% of this study participants applied the ADR approach; this shows a gap between the conceived DV knowledge and practical actions towards DV on the study population. This could be attributed to the dentist's fear of escalating the violence upon application of ADR without actual intervention. A study reported that DV screening may increase the identification of victims; however, screening programs could escalate violence if no further interventions to help victims were applied (Ramsey *et al.*, 2002).

The fact that DV perception is self-reported may over-estimate some of our findings, and this is one of the study's limitations. On the other hand, action (ADR) is a more precise measurement of true knowledge and of the application of that knowledge in dental practice. A direction for future research could be to compare the efficiency of having only knowledge versus having knowledge and applying it in practice. The result of this study could be generalised to different populations because DV is a global issue that affects different racial, socioeconomic, ethnic, and religious groups (C Watts & Zimmerman, 2002; Alhabib *et al.*, 2010).

In conclusion, DV education, dentist gender, ADR application, and previous exposure to DV in practice are the most relevant predictors of the ability to identify DV. Introducing DV in dental education and training strengthens dentists' ability to support DV victims; however, there was a significant discrepancy between the ability to identify a DV case and applying the ADR approach.

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