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### Legal dentistry

## COULD THE FEAR OF LEGAL ACTION BE A STRESS FACTOR IN DENTISTRY?

### *O medo de ações judiciais pode ser um fator de estresse na Odontologia?*

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### ABSTRACT

Dentists experience significant occupational stress caused by various factors in their professional lives, with a high prevalence; however, the perceived stress level and the consideration of legal actions by a patient as a stress factor are poorly explored. This study investigated the opinions of international dental practitioners on career-related stress factors and their perceived stress levels using an anonymous JISC online survey V3, showing eight questions. The data was compared across perceived stress level categories for each questionnaire's question using chi-square analysis. Time pressure, workload, and patient expectations were key stressors found, each reported by 35.4% of respondents (out of 99). Almost half of the dentists considered that patient suing a realistic stress factor in their career, and 1/4 have considered it a possibility. Further analysis revealed that dental practitioners who suffer policy or regulation pressure at work or consider the possibility of a patient suing them have 3.6 and 3 times more chances of high stress levels, respectively. Only 7% of dentists reported no stress in their professional careers, with a higher stress level proportion seen amongst those working in Academia. Work performance is realistically impacted by stress according to 30% of respondents, and is a possibility for 37%. Dental practitioners must deal with multiple stressors in their work, including but not limited to time pressure, workload, and patients' expectations. The possibility of legal action is a realistic stress factor, and the impact of stress on work performance is acknowledged in this study.

### KEYWORD

Legal dentistry; Stress factors; Legal action.

## INTRODUCTION

Dentists might experience stress as a response to a challenge, but stress is a cause for concern if it's making life difficult to cope with. Dentists experiencing occupational burnout may exhibit symptoms such as emotional exhaustion<sup>1,2,3</sup>, a sense of depersonalization or detachment from patients, and a decreased sense of personal accomplishment in their work. Depersonalization is the psychosocial distancing (armouring) of emotional demands in stressful situations, which can act as a coping mechanism<sup>4</sup>. Career insecurity and opportunity may increase the likelihood of burnout<sup>5</sup>. Several stress factors, including high workload, demanding patients, and pressure to meet high professional expectations<sup>3</sup> could result in sub-optimal work performance or medical errors<sup>6</sup>. A way of controlling stress is through recognition, since dentists are faced daily with potential occupational stressors<sup>5</sup>.

A broad sample of practitioners have mainly patient-centred concerns, such as threats of complaints/litigations<sup>7,8</sup>, dissatisfied patients and risk of making a mistake, whilst early career dentists are concerned about making a mistake and complaints directly from patients after treatment<sup>9</sup>. A high level of stress was observed amongst dentists from Bosnia and Herzegovina<sup>10</sup>. Time and scheduling pressure, pay-related matters and concerns about the future were found to rank highest among the categories of work stressors according to Romanian dentists<sup>11</sup>. In one of the states of Brazil, dentists presented job dissatisfaction associated with precarious

working conditions, lack of professional recognition and interpersonal relationships<sup>12</sup>.

A current growing phenomenon is defensive dentistry, which is the attempt to reduce the practitioner's exposure to litigation as well as the risks to health and safety concerns to both patients and staff. This response could affect the patients' dental care<sup>13</sup>. It should be mentioned that incidents of iatrogenic harm to dental patients occur, and many of the causes of error are related to human factors rather than technical ability or inadequate knowledge<sup>14,15</sup>. One of the most common causes of dental malpractice is diagnostic errors<sup>16</sup>. For this reason, professionals need to stay up to date with the latest developments and guidelines to provide the best possible care to their patients<sup>17</sup>; however, keeping abreast of new techniques could also be recognised as a potential source of stress<sup>5</sup>.

Moreover, the intensive use of social media and the internet<sup>18</sup> is making people more aware of their appearance, so medical and dental procedures are becoming more complex and invasive<sup>15</sup> due to the demand for implantology, cosmetic veneers, and the use of Botulinum toxin. Risk-mitigation practices to reduce dental errors were explored in the literature, however, the perceived stress levels of possible stress factors and the possibility of a patient suing as a stress factor have yet to be fully explored. This study aimed to investigate the opinions of dental practitioners on career-related stress factors and their perceived stress levels.

## METHODS

An anonymous educational e-survey of eight questions (Q1-Q8) was created using [JISC online surveys V3](#) as seen in Table 1. Ethical approval by the SREC-SHS-SDEN Committee was not required due to the anonymity of the sample. An introductory page explained the time commitment, termination of participation, confidentiality and anonymity. By completing the survey, the participant consented that responses and anonymised quotes could be reproduced in any potential presentations and publications. The e-

survey was sent by email to active dental practitioners who are familiar with Forensic Odontology: members of the Indo-Pacific Academy of Forensic Odontology, Association of Forensic Odontology for Human Rights (AFOHR), and students enrolled in the Forensic Odontology Master's programmes 2023-24, University of Dundee, UK. The survey was available from the 13<sup>th</sup> to 28<sup>th</sup> March 2024. Other dental-related healthcare workers (i.e., dental hygienists or dental nurses) were not offered the survey.

**Table 1: Description of the eight survey questions and response options.**

<b>Questions about career (Q1-Q3) followed by response options</b>
Q1. <i>Please select one of the options below that represent you the most.</i> a) I am a dental practitioner; b) I work in Academic Dentistry but used to work as a dental practitioner; c) I work as a dental practitioner and in the Academia; and d) I am a retired dentist
Q2. <i>How long have you been working as a dental professional?</i> a) 0-5 years; b) 6-11 years; c) 12-20 years; and d) more than 20 years
Q3. <i>Where do you work the most?</i> a) Government clinic; b) Private clinic; c) Hospital; d) Teaching hospital; e) university; and f) other
<b>Questions about perceived stress in Dentistry (Q4-Q8) followed by response options</b>
Q4. <i>On a score of 0-5, how stressed are (or were) you in your dental professional career?</i> a) 0- never; b) 1- almost never; c) 2- sometimes; 3 – fairly often; and 4) often
Q5. <i>Do you feel that the policy or standards regulated by your employer put you under pressure at work?</i> a) Yes; b) No; c) Maybe; and d) Not applicable
Q6. <i>In your opinion, what are the main stress factors in Dentistry?</i> Free text
Q7. <i>Do you consider that the possibility of a patient suing is a realistic stress factor in your career?</i> a) Yes; b) No; c) Maybe; and d) Not applicable
Q8. <i>Is your performance as a dentist being impacted by stress?</i> a) Yes; b) No; c) Maybe; and d) Not applicable

The data were compared across perceived stress level categories for each questionnaire's question using chi-square analysis. Additionally, to learn the odds ratio of stress, logistic regression was conducted, with stress level serving as the dependent variable and questionnaire questions as independent variables. The coefficients resulting from the logistic regression were converted into odds ratios (OR) data through exponential transformation. Here, an OR of 1 shows a

neutral value, while an increase in OR signifies an increased likelihood of stress, or vice versa. It is important to note that data showing "Not applicable" as an answer was removed from the calculation in the logistic regression analysis. All analyses were performed using R version 4.3.1. The only open-ended question (Q6) was analysed according to the themes mentioned by the dentists and their respective frequency.

**RESULTS**

The dataset consisted of 99 respondents, ranging from dental practitioners (n = 51), practitioners and academics (n = 19), academics with practitioner experience (n = 28), and retired dentists (n = 1). Due to the small number of retired dentists (n = 1), the category was merged into “dental practitioner” (n =52). The distribution of respondents’ jobs according to their experience and place of work was reported in Tables 2 and 3, respectively.

The results of odds ratio of perceived stress for question 5 (*Do you feel that the policy or standards regulated by your employer put you under pressure at work?*) were ‘yes’ 3.6 CI 95% (1.54-8.25); ‘maybe’ 0.88 CI 95% (0.44-1.76); and ‘no’ 0.21 CI 95% (0.07-0.61) whilst for question 7 (*Do you consider that the possibility of a patient suing is a realistic stress factor in your career?*) results were ‘yes’ 3 CI 95% (1.27 - 7.06); ‘maybe’ 1.05 CI 95% (0.54-2.05); and ‘no’ 0.26 CI 95% (0.34 - 0.7), as seen in Table 4.

**Table 2: Overall distribution of respondents’ jobs according to their experience (n=number).**

Job	Experience (years)				Total (n)
	0-5 (n)	6-11 (n)	12-20 (n)	> 20 (n)	
Dental Practitioner	15	9	21	7	52
Practitioner + Academic	2	6	4	7	19
Academic	11	4	5	8	28
<b>TOTAL</b>	<b>28</b>	<b>19</b>	<b>30</b>	<b>22</b>	<b>99</b>

**Table 3: Overall distribution of respondents’ jobs according to their workplace (n=number)**

Job	Workplace						Total(n)
	Government Clinic(n)	Hospital(n)	Other(n)	Private Clinic(n)	Teaching Hospital(n)	University(n)	
Dental Practitioner	7	5	6	34	0	0	52
Practitioner + Academic	0	0	1	6	8	4	19
Academic	1	1	2	7	11	6	28
<b>TOTAL</b>	<b>8</b>	<b>6</b>	<b>9</b>	<b>47</b>	<b>19</b>	<b>10</b>	<b>99</b>

**Table 4 - Distribution of odds ratio of perceived stress for question 5 and question 7 CI = Confidence Interval.**

Question number	Odds Ratio of High Perceived Stress		
	Yes	Maybe	No
5	3.6 CI 95% (1.54-8.25)	0.88 CI 95% (0.44-1.76)	0.21 CI 95% (0.07-0.61)
7	3 CI 95% (1.27 - 7.06)	1.05 CI 95% (0.54-2.05)	0.26 CI 95% (0.34 - 0.7)

Considering the opinions on perceived stress (Q4-Q5 and Q7-Q8), dentists are stressed in their dental professional career (Q4) ranging from ‘sometimes’ (43%), ‘fairly often’ (31%), ‘often’ (16%), ‘rarely’ (5%) to ‘never’ (2%), with two dentists that abstained from

answering (2%). They feel that the employer put them under pressure at work (Q5) in this order ‘yes’ (35%), ‘maybe’ (34%) and ‘no’ (24%). Considering the patient suing as a realistic stress factor in their career (Q7), 49% considered ‘yes’, 25% considered it a possibility (maybe),

and 22% did not consider (no). The stress would impact the career (Q8) of 30% (yes) of the dentists, but the majority (37%) considered it a possibility (maybe), and

29% did not consider it a possibility (no). The overall responses to the four questions are reported in Figure 1.

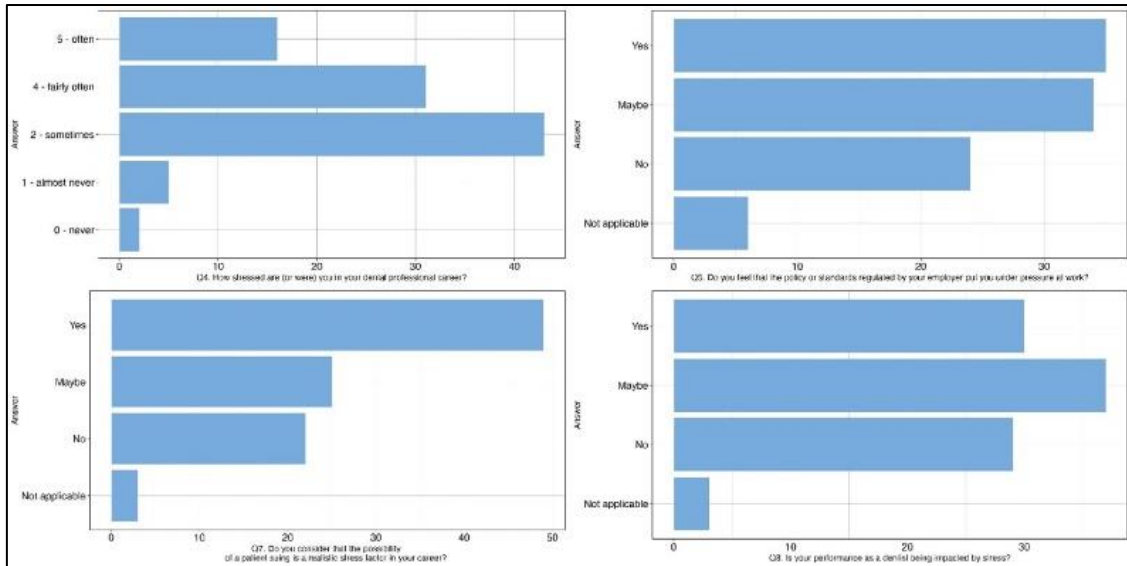


Figure 1: Distribution of responses on perceived stress (x=response options; y=number of dentists).

In the quantitative analysis, stress data were categorised into fewer groups: perceived stress levels scoring 0-2 were labelled as 'Low,' while scores of 4-5 were labelled as 'High.' It was seen that the proportion of stress levels among dentists exposed to academia (Practitioner and Academic = 0.68, Academic = 0.54) or university (Proportion = 0.875) was higher compared to those working in other dental practices, as seen in Figure 2.

Further quantitative tests using chi-square analysis revealed no significant differences ( $p > 0.05$ ) in stress levels based on job, years of work, or the possibility of patient lawsuits. However, significant differences ( $p < 0.05$ ) were seen in stress levels related to policy pressure and performance evaluation. Logistic regression analysis showed that dentists with concerns about policy pressure at work were 3.6

times more likely to have high-stress levels. Similarly, dentists under pressure to perform were found to have three times higher odds of experiencing high-stress levels. The results of the odds ratio of perceived stress for question 5 (*Do you feel that the policy or standards regulated by your employer put you under pressure at work?*) were 'yes' 3.6 CI 95% (1.54-8.25); 'maybe' 0.88 CI 95% (0.44-1.76); and 'no' 0.21 CI 95% (0.07-0.61) whilst for question 7 (*Do you consider that the possibility of a patient suing is a realistic stress factor in your career?*) results were 'yes' 3 CI 95% (1.27 - 7.06); 'maybe' 1.05 CI 95% (0.54-2.05); and 'no' 0.26 CI 95% (0.34 - 0.7).

Seventy-nine dentists completed question 6, which asked for the main stress factors in Dentistry by adding a free comment. Some comments mentioned

more than one theme but were considered separate, as seen in Figure 3.

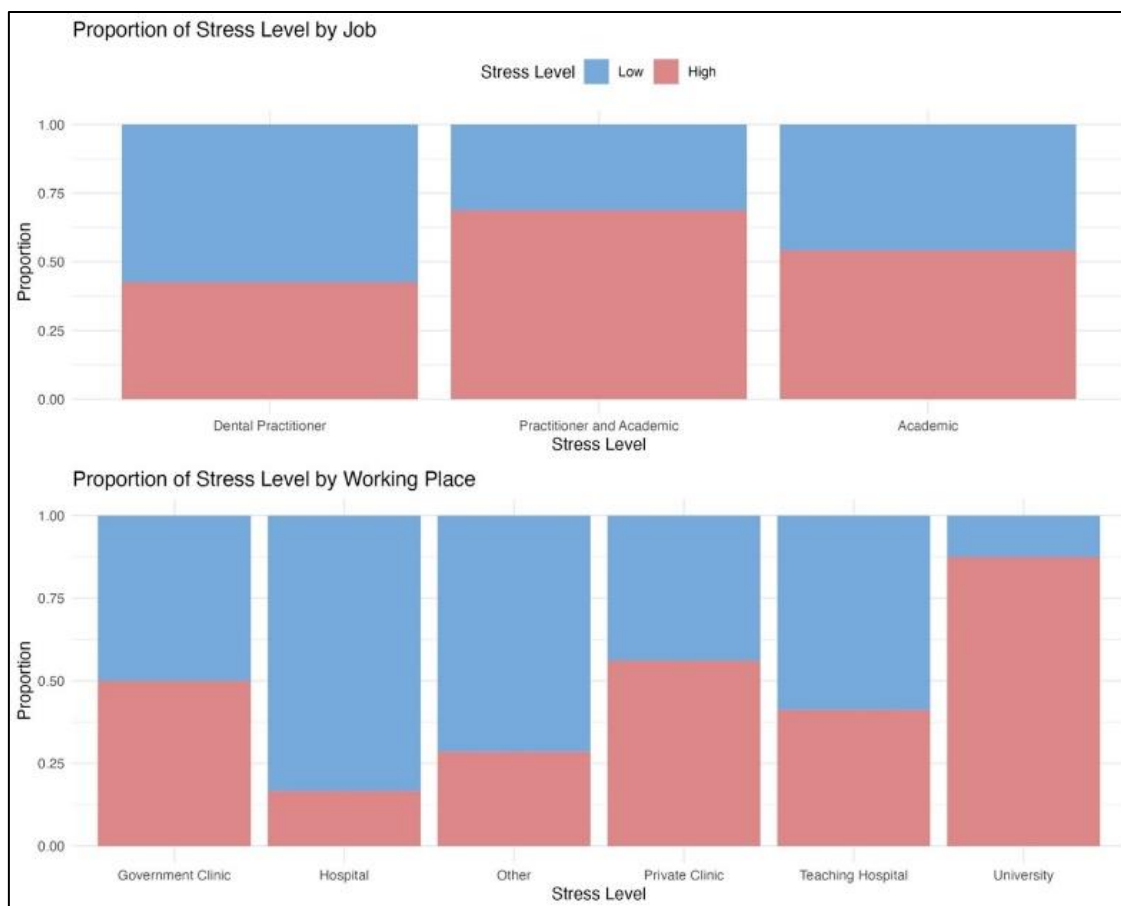


Figure 2: Proportion of stress level by job and working place, respectively.

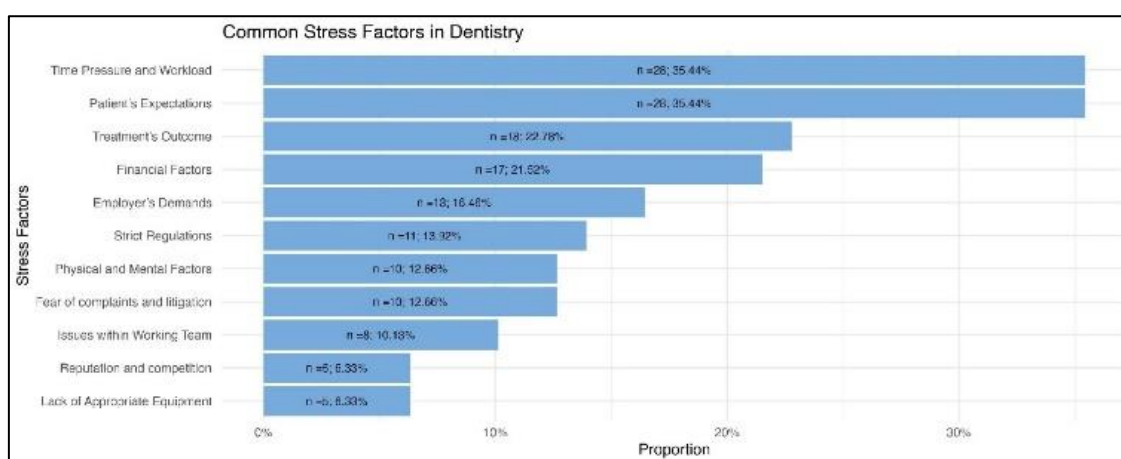


Figure 3: Common stress factors in Dentistry mentioned in question 6 (In your opinion, what are the main stress factors in Dentistry?).

## **DISCUSSION**

### **Current Level of Stress in the Dental Professional Career**

In this study, only a small percentage of dentists (7%) are not stressed in their dental professional careers. The proportion of stress levels among dentists exposed to academia was higher compared to those working in other dental practices. It is known that academics of educational institutions — including universities or teaching hospitals — face high levels of stress that affect their performance, level of personal satisfaction, well-being, relationship with their students and learner outcomes<sup>19,20</sup>. Moreover, stress related to research, teaching and administrative tasks are all negatively related to life satisfaction being emotional burnout the underlying mechanism for those effects<sup>21</sup>. The search for research funding, limited resources and time constraints also contribute<sup>22</sup>. Stress audits to identify stressors and career programmes should be implemented, including adequate pay packages to avoid faculty members' exploitation and ensure job security<sup>23</sup>.

Only 29% of dentists do not believe that their performance as a dentist is impacted by stress, but 30% consider it a reality and 37% a possibility. There is no empirical evidence quantifying the impact of stress on dentists' clinical performance<sup>7</sup>. It is important to mention that a greater understanding of the medicolegal aspects of the relationship with the patient, with particular regard to providing a piece of complete and comprehensible information, can reduce misunderstandings related to

the patient's expectations in terms of outcome, thus mitigating the risk of complaint and stress for the dentist<sup>24,25</sup>.

### **A variety of main stress factors according to the respondents' opinions**

In summary, the main stress factors were classified into three different pillars: patient (patient's expectation, treatment's outcome, fear of complaints and litigations), dentist (financial factors, physical and mental factors, reputation and competition) and environment (time pressure and workload, employer's demands, strict regulations, issues with working team and lack of appropriate equipment). Almost all the multiple stress factors opined by the respondents of this survey were indicated as stressors in dentistry by previous surveys and reports<sup>17,26</sup>.

#### **Patient**

Patient's expectations were identified as one of the most common stress factors (35.4%). Various studies focused on enhancing patient-centred care in dentistry and managing patient expectations<sup>18</sup> so, dental practitioners are mostly considered responsible for addressing the factors surrounding patients' perceptions and managing their expectations<sup>27,28</sup>. The dental team should ensure that the service encounters meet or exceed patient expectations<sup>29</sup>.

Following the treatment's outcome is the second most common stressor. It represents the clinical aspects, such as how long they last, possible failure or complications, healing rate, survival time assessment, long-term success,

identification of risk and protective factors, effects of new materials and techniques, and evaluation of clinical parameters<sup>30</sup> It also considers patient perspectives at the core of any outcome assessment<sup>31</sup>. It is understood that the patient-centred approach facilitates customised treatment planning and improves clinician-patient communication<sup>32</sup>.

Results indicated that almost half of the dentists (49%) considered legal actions, such as a patient suing is a realistic stress factor in their career, and 20% considered it a possibility. Medical or dental malpractice comprises the incorrect diagnosis or improper treatment that reduces the quality of the service provided, puts patients at risk or determines harmful consequences that require further dental treatments. In these situations, healthcare providers breach the standard of care, causing injury or resulting in damage<sup>33</sup> and extra costs for the patient to resolve it. The decision to take the litigation pathways comes from the patient, but also from a third party<sup>34</sup>.

Interestingly, 54% of the dentists had never heard of the concept of defensive dentistry before, and 89% thought they did not have enough knowledge about defensive dentistry<sup>35</sup>. Clinical implications of defensive dentistry could affect the choice of treatment. The older generation of dentists, who have gained experience by making and correcting mistakes, retire, the remaining younger dentists will become highly risk-averse and unwilling to perform any procedures that might put themselves or their patients at risk<sup>13</sup>. More importantly, dentists must know the most adequate

treatments for each of the accidents and complications that might happen during dental procedures and report to the patient.<sup>36</sup> Effective communication and time are keywords in the dentist/patient relationship<sup>37</sup>.

### Dentist

The respondents also mentioned finance as a stressor. Dental clinicians operate their practices as businesses and take on the full financial risk of providing services. The main methods for remunerating primary care dentists include fee-for-service, fixed salary, and capitation payments. Future studies should consider the level of payment, as well as the methods of remuneration, with careful alignment of the incentives with patients' care needs<sup>38</sup>. In Academia, financial frustration and funding uncertainty are seen<sup>39</sup>.

Additionally, many patients are intensely interested in receiving the best healthcare service at the least cost. Moreover, disturbances of teeth and mouth can cause serious and costly disturbances to work and leisure in all age groups<sup>40</sup>.

Another aspect is the competition in the dental field. On one hand, proponents of competition support alleged benefits of having a competitive market, such as improved quality of care and reduction in prices. On the other hand, opponents believe that competition results in unfavourable patient outcomes<sup>41</sup>. Also, maintaining a competitive level in the current market of dental services requires a gradual, planned renewal of modern dental



practices and enrichment of additional technical resources<sup>42</sup>.

The physical and mental factors require more evidence of the predictive value of risk factors.

It is important to note that external factors could contribute to the stress at work. For instance, the domestic strains of workers result from an inability to dissipate the tensions that accumulate over the workday. Alternatively, stress may flow from the family to the work setting, as in the inability of working mothers to keep family responsibilities from interfering with their workday<sup>43</sup>.

### **Environment**

Time pressure related to workload was also identified as one of the most common stress factors (35.4%). Clinically, time pressure negatively impacts one aspect of dentists' diagnostic performance, such as diagnostic errors and omissions of pathology, which can potentially affect patient safety and the quality of care provided<sup>44</sup>.

Working with colleagues may be a source of stress, but so is isolation<sup>45</sup>. Communication, reasonableness and organisation should be the basis of the dentist and staff relationships<sup>37</sup>.

Good working ergonomics is essential for dental professionals to work with capability, efficiency and a high clinical level of treatment. The treatment room with the patient chair, dental unit, operating light, dynamic and hand instrumentation, cabinetry and peripheral equipment must be flexible<sup>46</sup>. In the educational environment domain, the lack of dental equipment was a

strong stressor among dental students in Syria<sup>47</sup>.

Moreover, the use of adequate and good quality personal protective equipment is imperative for infection control in dental practice, and the usage of low-cost, uncertified and sub-standard products that decrease the safety levels of personnel should be avoided<sup>48</sup>.

Finally, the limitations of this study include the possible awareness of legal implications amongst the respondents, as they are familiar with Forensic Odontology. The sample was limited because the number of qualified forensic dentists is very low globally. We quantified the odds ratios of various variables contributing to dentists' perceived stress levels, identifying policy pressure and performance evaluation as significant factors. These analyses were conducted by evaluating each variable independently. However, multiple factors can influence a dentist's mental state<sup>49</sup>. Conducting a multivariable regression requires a larger sample size.

### **CONCLUSION**

Dental practitioners generally deal with multiple stressors in their work, including but not limited to time pressure, workload, and patients' expectations. The possibility of legal actions as a realistic stress factor and the impact of stress on work performance are acknowledged in this study. Future research should explore the relationships between stress factors and their effects on work performance in depth.

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## CONFLICT OF INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author, [SM], upon reasonable request.

## RESUMO

Os dentistas vivenciam estresse ocupacional significativo causado por diversos fatores em suas vidas profissionais, com alta prevalência. No entanto, o nível de estresse percebido e a consideração de ações judiciais por um paciente como fator de estresse são pouco explorados. Este estudo investigou as opiniões de dentistas internacionais sobre fatores de estresse relacionados à carreira e seus níveis de estresse percebidos, utilizando uma pesquisa online anônima do JISC V3, com oito perguntas. Os dados foram comparados entre as categorias de nível de estresse percebido para cada pergunta do questionário, utilizando análise qui-quadrado. Pressão de tempo, carga de trabalho e expectativas do paciente foram os principais estressores encontrados, cada um relatado por 35,4% dos entrevistados (de um total de 99). Quase metade dos dentistas considerou a possibilidade de um paciente processá-los um fator de estresse realista em sua carreira, e 1/4 considerou essa possibilidade. Análises mais aprofundadas revelaram que dentistas que sofrem pressão de políticas ou regulamentações no trabalho ou consideram a possibilidade de um paciente processá-los têm 3,6 e 3 vezes mais chances de apresentar altos níveis de estresse, respectivamente. Apenas 7% dos dentistas relataram não sentir estresse em suas carreiras profissionais, com uma proporção maior de níveis de estresse entre aqueles que trabalham no meio acadêmico. O desempenho profissional é realisticamente impactado pelo estresse, de acordo com 30% dos entrevistados, e representa uma possibilidade para 37%. Os dentistas lidam com múltiplos fatores estressantes em seu trabalho, incluindo, entre outros, pressão de tempo, carga de trabalho e expectativas dos pacientes. A possibilidade de ação judicial é um fator de estresse realista, e o impacto do estresse no desempenho profissional é reconhecido neste estudo.

## PALAVRAS-CHAVE

Odontologia legal; Fatores de estresse; Ação judicial.

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