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Occupational Stress in Australian Dentists

ABSTRACT: *The study sought to identify and understand chronic sources of work stress in Australian dentists. Content analysis of interviews with a sample of registered NSW dentists was used to develop categories of chronic sources of stress. The study found that like their international counterparts, Australian dentists are subject to a variety of job-specific stressors. The six stress source categories were time and scheduling pressures, professional concerns, patient/public perceptions of dentists, staffing problems, pressures associated with treating patients and business process stressors. The most notable difference between Australian and international dentists, however, relates to the business side of dentistry. It appears the Australian statutory, regulatory and industrial relations environment places unique and profound pressures on Australian dentists.*

Keywords

Allied health practitioners; Australia; dentists; interviews; stressors; work stress

The reputation of dentistry as a stressful profession has long been reported (for example, Cecchini 1985; Warr, Barter & Brownbridge 1983). Dentistry may be one of the most stressful of all professions (Sloan & Cooper 1986), a perception perhaps encouraged by the ‘generally negative image of dentistry held by the public, where there is widespread anxiety about visiting the dentist’ (Kent 1987, p. 127). This perception may be fuelled by accounts of dentists’ alleged tendency to commit suicide (Alexander 2001; Gerschman & Burrows 1998; Stack 2001).

Dentistry in Australia is seen as a stressful profession, with researchers such as Joffe (1996) regarding it as the ‘impossible profession’ due to difficulties in balancing the pressures of a dental career with family life and personal space. It is difficult to provide remedies to Australian dentists’ stress and strain given ‘no one really knows the extent of the problem’ (Joffe 1996, p. 209).

Winwood, Winefield and Lushington (2003) considered the extent to which stress contributes to hazardous alcohol consumption among South Australian dentists. Although supporting Joffe’s (1996) assertions on the stressful nature of Australian dentistry, their research leaves many questions unanswered, including what causes the practice of dentistry to be so stressful?

While unanswered in Australia, international researchers (for example, Cooper, Mallinger & Kahn 1978, 1980; Cooper et al. 1988; Cooper, Watts & Kelly 1987) have attempted to identify the stressful aspects of dentistry. Cooper, Mallinger and Kahn (1978) found the demands of sustaining and building a dental practice and being an inflictor of pain were significant sources of stress. Cooper,

Watts and Kelly (1987) investigated mental health and job stress in 484 UK dentists. They identified a five-factor model, the Work Stress Inventory for Dentists (WSID) that accounted for around 40 per cent variation in stress. The WSID or adaptations have been used in the USA (O'Shea, Corah & Ayer 1984), the Netherlands (Gorter et al. 1999b), New Zealand (Ayers et al. 2008), Saudi Arabia (Jamjoom 2008), and the UK (Cooper et al. 1988; Humphris et al. 2002; Myers & Myers 2004a, 2004b; Wilson et al. 1998). All have confirmed the stressful nature of dentistry in those countries. The sources of stress in Australian dentists have not been addressed, however. The current study aims to identify and understand the sources of work stress in the Australian dentistry context. The principal research questions are:

1. What are the chronic sources of work stress in Australian dentists? and
2. To what extent are stressors of Australian dentists aligned to the stressors identified in Cooper et al.'s (1980, 1988, 1987) WSID?

Answering the above questions will extend the literature firstly by confirming whether Australian dentists are exposed to similar sources of work stress as dentists internationally and secondly, by identifying uniquely Australian dental work stressors.

METHODS

Permission to conduct the study was given by the Human Research Ethics Committee at the University of Technology, Sydney. The sampling method recommended by Jones (2002) was used. A purposive sample of registered ADA NSW Branch members was invited by telephone to participate in the study. Participants were selected because they represented the key characteristics of the broader ADA population. While this method does not guarantee a representative sample, it is useful where sampling for proportionality is not the primary concern (Sproull 2002). Sampling continued to the point of redundancy, stopping when no new information was forthcoming from participants.

A total of 18 semi-structured interviews were conducted to gain adequate answers to the research questions. Fifteen interviews of 45 to 90 minutes were conducted in person at the interviewee's dental practice and three were conducted by telephone. Interviewee characteristics are reported in Table 1. The period since graduating averaged 20.8 years. After the recorded interviews

were fully transcribed, themes were identified, developed, refined and clarified using Kvale's (1996) seven stages of interview investigation and analysis (thematizing, design, interviewing, transcribing, analysing, verifying and reporting). The semi-structured interview method is consistent with Cooper et al.'s (1987) seminal work on dental work stress.

*** Table 1 to go here ***

RESULTS

An inductive method of content analysis of the interview transcript was used to develop categories of chronic sources of stress. This process involved open coding, creating categories and abstraction (Burnard 1991). For open coding, transcripts were analysed for stressors. Categories were loosely generated and the frequency with which each stressor was commented on was recorded on coding sheets. Where a stressor was mentioned less than five times, the stressor was not reported. There were 349 stressors with more than five interview mentions.

Following open coding, the stressors were grouped. The aim of grouping was to reduce the number of individual stressors by collapsing similar categories into broader higher order categories. Creating categories provides a means of describing the work stress phenomenon, increase understanding and creates the capacity to generate knowledge (Cavanagh 1997). During this abstraction, each category was named using content-characteristic words. Subcategories with similar events and incidents were grouped together before establishing main categories. Table 2 details the frequency of mentions of each stressor within each category. The categories are then described.

*** Table 2 to go here ***

Australian dentists' sources of work stress

Time and scheduling pressures. Accounting for around 26 per cent of comments regarding sources of work stress, time and scheduling pressures were referred to by every dentist as a significant source of stress, substantially more than any other stressor. Dentists reported that running late or patients attending late had a flow-on effect and was critical to patient satisfaction. Running behind schedule tends to frustrate and annoy patients, especially when patients arrived on time yet were kept waiting. Further, having patients constantly waiting weighed heavily on their minds. While dentists

empathised with patients' frustration and annoyance, they emphasised that quality of care takes precedence. Dentists referred their own frustration to their auxiliary staff, often creating tensions in the workplace. Running behind schedule also meant dentists would often miss lunch breaks or run late for family or social commitments. A typical interview mention included multiple points, for example:

Waiting room pressure is the worst, having people waiting or having patients turning up late keeps me under stress all afternoon... For instance today by 4 o'clock I had six people waiting to see me [Dentist 2].

I have patients literally every quarter of an hour and there are no real breaks from that unless someone does not turn up [Dentist 3].

There's a pressure on you. It's like being in a pressure cooker sometime. As I've got older I've suffered my from that [stress]. Its funny when I was younger I think I was better able to cope with stress [Dentist 5].

If I could control it better I would like to cut down more, so we don't have days where there is a lot of pressure and it's a really horrid day.... But if I cut back people complain they can't get in to see me [Dentist 15].

Professional concerns. Accounting for approximately 20 per cent of comments regarding sources of work stress, professional concerns encompassed issues concerning professional integrity and accountability. The most reported issues related to the requirement of continuing professional development (CPD), the constant striving for perfection, and the fear of litigation. Dentists were acutely aware they performed invasive and irreversible procedures, reflected in their desire for accuracy and precision. In some cases dentists reported malpractice concerns have made their relationships with patients less personal and caused them to be more candid in their conversations. Relatively new at the time of the study, the national registration and accreditation scheme required Australian dentists to meet CPD requirements set by the Dental Board of Australia. Although many signified their regular participation in CPD activities, the mandatory nature seemed to be disturbing:

There have been dramatic changes in dentistry and you constantly need to keep on top of it and now we're made to with the introduction of CPD [Dentist 11].

I know it is really not a good way to think but I practice by perfection... You know, is this perfect? But dentistry is not like that. There are very few things you can look at and go that is perfect. Most of the time you go yeah that's ok, that's functional, that's passable but to get it where everything blows you away every time it's really hard... Yet I still try [for perfection] [Dentist 6].

One per cent of the time you reach absolute perfection and all the other times you fail [Dentist 18].

I'm always looking at things and thinking will there be any legal ramifications from this? [Dentist 16].

I'm a very aggressive practitioner and I take risks but I take calculated risks so I make sure I document everything just in case of litigation... It's [litigation] always in the back of my mind [Dentist 4].

Increasing compliance requirements, and getting sued increase your stress levels [Dentist 9].

Patient/public perceptions of dentists. Patient and public perceptions accounted for 7.5 per cent of comments regarding sources of work stress. Being perceived as an inflictor of pain or being regarded as wealthy appeared to play on the mind of dentists. Dentists reported they were often the brunt of sly comments regarding their perceived level of prosperity. Some dentists indicated that patient and public perceptions were the primary driver in determining the type of motor vehicle they purchased. Comments made by patients concerning a dentist's wealth status seem to particularly resonate with younger, less established dentists who often indicated they were laden with debt:

When a patient walks in the door they will say I hate you, then they usually qualify it with actually I hate what you do. Part of my job is to change their view. I want them to see that dentistry is not all bad and that they can like us and what we do [Dentist 10].

There is a societal expectation that if you are a dentist you are wealthy [Dentist 2].

Consumers are ignorant of what makes a health professional a health professional and the media I think affects people's attitudes [Dentist 17].

Staffing problems. Staffing problems accounted for 7.5 per cent of comments. Auxiliary staff not turning up to work, interpersonal conflicts, and inexperienced dental assistants were frequently raised. Spiteful attitudes and disagreements among staff were reported as a considerable source of stress:

We had one girl who would take days off sick and the other girls would pounce on me... Happy staff is a happy environment in my view [Dentist 18].

We're not trained to do that [deal with staff] our skills are in dentistry [Dentist 6].

Staffing is my number one stressor [Dentist 5].

If you've got one bad egg it's bad for everybody, if you you've got a really good team everyone comes to work with a smile on their face they get on well and it's just one big happy family [Dentist 9].

We tend not to handle staff well as we are not trained to do it, and a lot of the issues are personality driven [Dentist 16].

Even if I dislike a member of staff immensely, because of my fear that they may take things or go to some sort of authoritative body and try and get some money out of me [Dentist 7].

Pressures associated with treating patients. Pressures associated with treating patients accounted for around 19 per cent of comments. Dentists spoke of patients being unaware or simply not appreciating the time, effort and cost of a high standard of dental care. A majority of dentists worked full-time, treating patients for more than six hours a day. This heavy workload required intense concentration and focus for long periods which for some became tiring and arduous. Unsatisfied patients were another stressor. Dentists spoke of patients as walking advertisements that were either advocates of their work or testimony to their failings:

Because people are more aware of their rights as consumers they become more demanding and sometimes to the extent they are unreasonable [Dentist 10].

Ungrateful patients are exhausting [Dentist 1].

When you get demanding and unreasonable patients you wonder why the hell I do this [Dentist 11].

If I'm rude to a patient they can make a complaint against me to a statutory authority, however if a patient is rude to me I've got nowhere I can go [Dentist 15].

As I get older and meet more of these types of people [unreasonable patients] I question if it's all worth it, putting up with that sort of crap [Dentist 5].

Lack of compliance gets me, you are asking people to do things for themselves... You think "I'm not doing it for me, I'm doing it for you so why aren't you doing this?" I find that really frustrating and ask myself what the hell am I doing this for [Dentist 16].

Business process stressors. Stressors associated with running and managing a dental practice were frequently highlighted as a source of work stress. Contributing almost 16 per cent of comments, issues raised in this category included having to undertake or oversee financial administration and book-keeping transactions, human resources and industrial relations matters, and quoting fees and collecting payment. Dentists spoke of the changes to conditions of employment for dental assistants and reception staff they were required to implement. These changes included things such as increase in casual loading rate (from 20 to 25 per cent), the requirement to provide at least three hours of work, and a decrease in the ordinary hours of work (from 40 to 38 hours):

Back in the day you were just a dentist and you could be relatively autonomous, but now there is everything from GST to fire safety, to IR laws. Its changing all the time, it makes me stressed, just put me in the surgery and let me do what I know. I can deal with what happens in there, but all this business stuff arghh [Dentist 5].

I constantly worry about whether people will pay, and if the practice will be busy enough to support the financial investment paid [Dentist 18].

Setting up business was difficult... I roughly knew the mechanisms by which to organise finance which I did and I did organise finance for everything, for the building and every piece of equipment was leased. I had mortgages coming out of my ears for the first number of years... 5 to 10 years anyway [Dentist 15].

I am always conscious of the fact that I employ other people. If we get quiet I still have to pay the wages. I've got a technician who relies on me you know. I'm quite conscious of that. My nurse has two kids and she has worked really hard for me so I have to keep the practice going, cos we are all dependent on it [Dentist 8].

Australian dentists' sources of stress compared to the WSID

After establishing the six categories of dentists' sources of stress, deductive analysis was used to establish the extent to which the Australian dental stressors align with the stressors identified in

Cooper et al.'s (1980, 1988, 1987) work stress inventory for dentists (WSID). A structured categorisation matrix was developed to compare the WSID and Australian categories of sources of stress. The Australian categories were reviewed for content and coded for correspondence with or exemplification of the WSID categories.

One of the main categories from the current study – business process stressors - did not fit with the WSID in the structured categorisation matrix. As the category's development was decisively established through the inductive content analysis, the category has been included in the matrix to highlight the category that appears unique to Australian dentists. Table 3 shows the structured categorisation matrix.

*** Table 3 to go here ***

DISCUSSION

The study sought to identify the chronic sources of stress experienced by Australian dentists. Previous empirical studies investigating work stress in dentists internationally have generally relied on the Work Stress Inventory for Dentists (WSID) by Cooper et al. (1978; 1988; 1987). Since the inventory was validated in the UK and no comparable studies have been undertaken in Australia, it was important to clarify whether Australian and UK working conditions and associated demands were similar.

Although diverse, the stressors were able to be classified into six broad categories. *Time and scheduling pressures* were the most frequently reported source of stress for Australian dentists, consistent with international studies (e.g., Cooper, Watts & Kelly 1987; Gorter 1999c; Myers & Myers 2004a; O'Shea, Corah & Ayer 1984). The interference between a dentist's professional and private life has been identified in previous research (Gorter 1999c).

The second category of stressor was *professional concerns*. Similarly, Godwin et al. (1981, p. 220) found perfectionism was a major source of stress for USA dentists and claimed some dentists were even 'fearful of failure in practice'. Humphris and Cooper (1998) found the threat of litigation an important stressor for UK dentists.

The third category of stressors was *patient and public perceptions of dentists* stressors related to stereotypes of dentists as inflictors of pain and being wealthy. Being perceived as an inflictor of

pain is commonly cited (Cooper, Watts & Kelly 1987; Gorter 1999; O'Shea, Corah & Ayer 1984), however the stressor of being perceived as wealthy appears unique to Australian dentists.

Staffing problems were the fourth stressor category and centered on insubordination and interpersonal conflicts. Staff problems have been widely cited internationally as a significant source of stress (Cooper, Watts & Kelly 1987; Humphris & Cooper 1998). Gorter (1999c) highlighted team aspects such as dependency on a good dental assistant, professional relations with dental assistants and communication with staff as stressors for Dutch dentists.

The fifth category of stressors was *pressures associated with treating patients*, including patients being unaware of the difficulty involved with procedures, maintaining concentration and unsatisfied patients. These stressors are consistent with international studies (Cooper, Watts & Kelly 1987; Gorter 1999c). Finally, *stressors associated with running a business* were associated with financial administration, book-keeping, human resources and industrial relations matters. Previous studies have highlighted business processes as a source of stress (Godwin et al. 1981; Gorter 1999; Moller & Spangenberg 1996; O'Shea, Corah & Ayer 1984), particularly in relation to business management and financial pressures.

The interviews provide valuable insight to the chronic sources of work stress in Australian dentists. While previous studies concerning the nature and frequency of dental stressors have been conducted internationally, this is the first comprehensive study of chronic sources of work stress in Australian dentists.

Australian dentists' sources of stress compared to the WSID

The major sources of stress were then compared to the five stress factors of the WSID (Cooper, Watts & Kelly 1987). Some similarities as well as some differences were identified. The frequency of comments relating to unsatisfactory laboratory items and/or laboratory delays for Australian dentists did not meet the imposed threshold to be categorised. The repetitive nature of work was part of the WSID but was not identified as an Australian stressor.

The Australian professional concerns category does not have a comparable WSID factor, although some parallels can be drawn with the 'pay-related stressors' factor. The WSID pay-related stressor category identifies the inability to meet one's own expectations or standards as a stressor,

while the current research categorises the constant striving for perfection as a stressor. Australian dentists also identified the inability to take time off due to financial pressures as a major stressor, and while this was not an explicit subcategory within the WSID, it does fit within the context of the WSID factor. The professional concerns category gives rise to a broader range of stressors, including the fear of litigation, the need to meet CPD requirements and infection control guidelines. This category also includes stressors associated with making mistakes and separation and lack of communication with colleagues, both of which are incorporated in alternative WSID factors.

The Australian dental business context

Australian business process stressors were dominated by regulatory and financial concerns. The introduction of the national registration and accreditation scheme in July 2010 and the obligation to comply with changing enforceable minimum terms and conditions of employment seem to create apprehension. With the regulatory burden increasing, there was growing concern among interviewees that compliance costs were increasing the cost of providing dental care to patients without any commensurate improvement to the quality and safety of dental services. The majority of Australian dentists work in private practice where they own and operate their practice, work in partnership or as an associate. The majority of Australian dental patients are funded privately, with or without assistance of dental insurance (National Advisory Committee on Oral Health 2004). This contrasts with the United Kingdom, where dental care is generally publicly funded by the National Health Service. It would appear that Australian regulatory and funding arrangements heighten the stressors associated with running an efficient and productive business. Particular business-related stressors identified by Australian dentists such as financial administration, book-keeping, human resources and industrial relations matters do not feature in the WSID.

The research is limited by the small but purposive sample of dentist members of the NSW Branch of the ADA. Broader generalisations of the findings must be made with caution. The authors advocate for further research to assess the perceived work stressors in the broader Australian dentist population through methods such as survey research.

Conclusion

Like their international counterparts, Australian dentists are subject to a variety of job-specific stressors, including time and scheduling pressures. The chronic sources of work stress were mostly consistent with the five stress factors measured by Cooper et al.'s (1980, 1988, 1987) WSID. While our dentists are not stressed by laboratory errors or delays, additional stressors relating to the business of dentistry in Australia, such as the perception of wealth and the fear of litigation, should not be overlooked. The most notable difference between Australian and international dentists, however, relates to the business side of dentistry. It would appear that the Australian statutory, regulatory and industrial relations environment place unique and profound pressures on Australian dentists.

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Table 1 Interviewee characteristics

Identifier	Gender	Practice Location		Specialty	Year of graduation	Years since graduation
		Metropolitan,	regional or both			
Dentist 01	Male	Both		General	1986	24
Dentist 02	Female	Metropolitan		General	2003	7
Dentist 03	Male	Metropolitan		Orthodontist	1982	28
Dentist 04	Male	Metropolitan		General	1999	11
Dentist 05	Male	Metropolitan		General	1971	39
Dentist 06	Male	Both		Orthodontist	1974	36
Dentist 07	Female	Metropolitan		Paediatric	1997	13
Dentist 08	Male	Metropolitan		Orthodontist	1971	39
Dentist 09	Male	Metropolitan		General	1998	12
Dentist 10	Male	Metropolitan		General	1994	16
Dentist 11	Female	Metropolitan		General	2004	6
Dentist 12	Male	Both		General	2004	6
Dentist 13	Female	Regional		Academic & General	1993	17
Dentist 14	Female	Regional		General in Government	1977	33
Dentist 15	Male	Metropolitan		General	1983	27
Dentist 16	Male	Regional		General	1988	22
Dentist 17	Male	Metropolitan		General	1988	22
Dentist 18	Male	Metropolitan		General	1994	16

Table 2 Frequency of mentions for each stressor

<i>Main Sources of Work Stress</i>	<i>Frequency of mentions</i>	<i>Percentage</i>
<i>Time and scheduling pressures (26%)</i>		
• Balancing work time with family time	5	1.43
• Patient's failing to attend scheduled appointments	7	2.01
• Running behind schedule/keeping patients waiting	<u>23</u>	<u>6.59</u>
• Having time to see people in pain	9	2.58
• Maintaining appointment schedule	<u>19</u>	<u>5.44</u>
• Patients constantly waiting to see you	<u>21</u>	<u>6.02</u>
• Balancing a variety of demands	7	2.01
<i>Professional concerns (20%)</i>		
• Constantly striving for perfection	<u>17</u>	<u>4.87</u>
• Fear of litigation	11	3.15
• Continuing professional development	<u>19</u>	<u>5.44</u>
• Conforming with infection control guidelines	7	2.01
• Making mistakes or work failing	5	1.43
• Inability to take time off due to financial pressures	5	1.43
• Separation from and lack of communication with colleagues	7	2.01
<i>Patient/public perceptions of dentists (7.5%)</i>		
• Belief that all dentists are wealthy	9	2.58
• Ignorance associated with the costs of practicing of dentistry	6	1.72
• Perceived as an inflictor of pain	11	3.15
<i>Staffing problems (7.5%)</i>		
• Inexperienced dental assistants	5	1.43
• Interpersonal conflicts with staff	9	2.58
• Auxiliary staff not turning up for work	12	3.44
<i>Pressures associated with treating patients (19%)</i>		
• Demanding and unrealistic patient expectations	6	1.72
• Difficult, demanding parents/relatives	7	2.01
• Patients unaware of the difficulty involved with procedures	14	4.01
• Fearful and difficult patients	8	2.29
• Unsatisfied patients	8	2.29
• Uncooperative patients	5	1.43
• Lack of patient responsibility regarding their oral health	7	2.01
• Maintaining concentration	13	3.72
<i>Business process stressors (16%)</i>		
• Financial administration/book-keeping	16	4.58
• Equipment breakdowns	6	1.72
• Not enough or too many patients	11	3.15
• Government regulations	7	2.01
• Human resource and industrial relations matters	15	4.30
• Quoting fee and collecting payments	12	3.44
Total	349	100

Table 3: Australian dentists' major sources of stress compared to the WSID factors

Five Sources of Work Stress from the WSID	Six Sources of Work Stress for Australian Dentists
<ol style="list-style-type: none"> 1. Time and scheduling pressures 2. Pay-related stressors 3. Patient's unfavourable perceptions of dentists 4. Staff and technical problems 5. Problems dealing with patients 	<ol style="list-style-type: none"> 1. Time and scheduling pressures 2. Professional concerns 3. Patient/public perceptions of dentists 4. Staffing problems 5. Pressures associated with treating patients 6. Business process stressors