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Original Research

Assessing stress factors and coping strategies among orthodontists: A cross-sectional study

Shameem

Registrar, Security Forces Hospitals, Makkah, KSA

ABSTRACT:

Objectives: Recognizing causes of stress can help prevent associated adverse effects. This study aimed to investigate causes of occupational stress and coping behaviors among general dentists. Methods: This cross-sectional study was carried out from April to December 2014. A modified version of the Occupational Stress Indicator questionnaire was used to assess causes of stress and coping be haviours among 284 general dentists. Results: A total of 186 dentists participated in the study (response rate: 65.5%). Of these, 58.9% reported often being stressed. The mean general stress score was 63.33 ± 19.99 . The most common causes of stress were maintaining high levels of concentration while working (65.6%), time pressures (64.5%), concern over their ability to deliver dental services in future (60.2%) and rising costs (59.1%). No significant relationships between stress and gender, age, workplace or working hours per week were noted (P > 0.05). However, there was a significant correlation between general stress scores and years of job experience (P = 0.05) and number of patients treated daily (P = 0.03). The most common methods for coping with stress were resting (71.0%), sports (45.2%) and entertainment (43.0%). Most dentists felt that stress management courses could help to reduce stress (89.7%). Conclusions: This study showed that many general dentists in Kerman face several sources of stress, including time pressures, maintaining high levels of concentration during work hours and rising costs. Therefore, it is recommended that workshops, seminars and education programmes on occupational stress be organized for clinical dental staff periodically. This may help general dentists to manage stress levels and improve their working conditions. Keywords: Psychological Stress; Dentists; Coping Behavior; Iran.

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Corresponding author: Shameem, Registrar, Security Forces Hospitals, Makkah, KSA

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INTRODUCTION

Stress pervades all professions (1) Although a moderate amount of stress arising out of deadlines, expectations, and competition acts as a stimulant, and drives one to perform to maximum capacity. overwhelming stress paralyzes the cognitive and behavioral capacities of the individual, affecting his wellbeing (2) On the work front, it negatively affects productivity(3) and induces absenteeism on the personal front, it breeds frustrations, spoils relationships. Long-term exposure to stress can cause physical and psychological problems such as anxiety, depression, cardiovascular diseases, digestive problems, insomnia and headaches (4) Stress can have professional consequences which include absenteeism. and reduced productivity job dissatisfaction, leading in some cases to redundancy or early retirement.(5)Modern dentistry involves

numerous occupational health hazards, including stress, allergic reactions, high noise levels, radiation and musculoskeletal disorders.(6) Modern dentistry involves numerous occupational health hazards, including stress, allergic reactions, high noise levels, radiation and musculoskeletal disorders(7,8) Dentists face considerable stress at work from dental school onwards (6) The development of new and complex technologies, methods and treatment techniques can be an additional source of pressure. Several studies have reported high levels of stress among dentists and many researchers have classified dentistry as a stressful job (6,9)

In a study conducted in the UK by Myers et al., 60% of dentists reported being nervy, tense or depressed due to work stress (10) Cooper et al. indicated that causes of stress among dentists included too little work, administrative difficulties, attempts to establish

a practice and dealing with different patients.8 In a similar study, Humphries et al. found that sources of occupational stress included treating a high volume of patients, dealing with nervous patients and collecting payment (11) Prolonged experiences of stress among dentists can have detrimental effects on interpersonal and professional relationships, as well as on mental and physical health.8 For mental health, the consequences can include burnout, depressive disorders, decreased motivation and self-esteem; in contrast, the most commonly reported stress-related physical health issues are lower back pain, increased musculoskeletal complaints, headaches and gastrointestinal problems(12,13)Research has shown that dentists with high stress levels have low awareness of strategies to manage stress.

METHODOLOGY

In order for the sample size to be large enough for the results to be statistically significant, all 284 general dentists working. A modified version of the Occupational Stress Indicator questionnaire was used. The first section of the questionnaire collected demographic information, while the second section consisted of 33 items to assess causes of stress and coping behaviours. Participants rated stressors in terms of their frequency, using the following terms: 'never', 'seldom', 'sometimes', 'often', 'very often' and 'always'. General stress scores were calculated by summing the items. The original English questionnaire was translated into Persian and the internal consistency of the modified and revised questionnaire was assessed using Cronbach's alpha (a = 88%). Similar questionnaires have been used in different studies all over the world (9.11.15.16) The questionnaire was distributed to the participants for self assessment before being collected three days later. Data were analysed using the Statistical Package for the Social Sciences (SPSS), Version 18 (IBM

Corp., Chicago, Illinois, USA). Descriptive statistics were expressed as means, standard deviations and frequencies. A student's t-test was used to compare the effects of variables. The level of significance was defined at P<0.005. This study was approved by the Research Ethics Committee of the Kerman University of Medical Sciences. The aims of the study were explained to all subjects and informed consent was obtained before participation.

RESULTS

Of the 284 general dentists invited to participate in the study, 186 responded (response rate: 65.5%). Of these, 58.9% reported often being stressed. The demographic characteristics of the participants and relationships with general stress scores are presented in Table 1. The mean general stress score was $63.33 \pm$ 19.99. There was no significant relationship between general stress scores and age, gender, workplace or working hours per week. However, general stress scores showed a significant correlation with years of experience (P = 0.05) and number of patients treated per day (P = 0.03). A post hoc analysis showed that general dentists with less than 10 years of experience exhibited higher stress scores than general dentists who had more than 20 years of experience; the mean difference was statistically significant (P = 0.05). In addition, general dentists who treated fewer than 12 patients per day had lower stress scores compared with general dentists who treated more than 12 patients per day (P = 0.03). Dentists working in the public sector were more stressed by a lack of patient appreciation while those working in the private sector identified undesirable auxiliary help as a source of stress. The most common sources of stress were maintaining high levels of concentration during working hours (65.6%), time pressures (64.5%), concern over their ability to provide dental services in future (60.2%) and rising costs (59.1%).

Table 1: Demographic characteristics and general stress scores* among general dentists(N=186)

Variable	n (%)	Mean stress score ± S	P value	
Gender				
0.77				
Female	78 (41.9)	64.03 ± 21.5		
Male	108 (58.1)	62.83 ± 18.9		
Age in years		0.90		
<38	98 (52.7)	65.31 ± 18.9		
38–52	78 (41.9)	63.21 ± 20.8		
>52	10 (5.4)	45.00 ± 17.6		
Place of employment				
0.76				
Government clinic	26 (14.0)	7.1 ± 20.0		
private clinic	118 (63.4)	62.7 ± 20.5		
Both	42 (22.6)	62.5 ± 18.9		
Years of experience				
0.05^{+}				
<10	100 (53.8)	65.98 ± 18.9		
10-20	68 (36.6)	63.35 ± 21.3		

> 20	18 (9.7)	48.56 ± 15.1			
Number of patient per day					
0.03					
<12	144 (77.4)	61.49 ± 19.5			
>12	42 (22.6)	74.38 ± 18.4			
Working hours per week					
0.87					
<20	52 (28.0)	62.62 ± 19.8			
20-40	118 (63.4)	61.68 ± 20.0			
>40	16 (8.6)	57.83 ± 24.7			

DISCUSSION

Stress has widely documented physical and psychological consequences, such as anxiety, burn-out and the development of cardiovascular diseases (6,10,15,16) Previous studies have shown that dentistry can be a stressful occupation(19,20) research on the sources of this stress may be able to assist early prevention and intervention initiatives. This study aimed to study sources of stress and strategies for managing stress among general dentists in Kerman. In the current study, 58.9% of the dentists surveyed suffered from stress. Similar results have been reported in studies of general dentists in the UK (68.4%), dentists in Denmark (59.7%) and orthodontists in Morocco (44%)(10,16,19) The most common stressors among general dentists in the current study were maintaining concentration, constant time pressures, concern over their ability to provide dental services in future and rising costs. The most common stressors among general dentists in the current study were maintaining concentration, constant time pressures, concern over their ability to provide dental services in future and rising costs. Ayers et al. reported consistent findings, in which the second and third most common sources of stress among general dentists in New Zealand were timerelated pressure (48%) and the need to maintain high levels of concentration at work (43%); however, the most common source of stress was treating uncooperative children (52%).22 Similarly, the most common sources of stress among general dentists in the UK involved treating difficult or uncooperative patients (64.8%), continuous time pressures (64.4%)and constraints imposed by the National Health Service (46.2%).(5) Kay et al. also reported that the most common stressors at work among UK dental practitioners consisted of demands made by patients (75%), problems associated with practice management and staff (56%) and fears relating to complaints and litigation (54%).(12) In a study of dentists in Islamabad, Pakistan, finding enough time for family and friends was reported as the most common source of stress.13 Cooper et al. indicated that time management problems were a common source of stress among dentists.8 In the current study, constant time pressures were also identified as a major source of stress; these pressures may lead to difficulties with time management and staying on schedule. This findings is consistent with previous

research. Time constraints may be a cause of stress for dentists due to the pressure to schedule as many appointments as possible or perhaps because it impinges on time with family or on other non-workrelated interests. However, in contrast to the population surveyed in the present study, dentists in other studies have shown less concern about their ability to work and provide dental services in future.(11,21) No significant differences were observed between males and females in the current study with regards to occupational stress. This finding mirrored a study in Yemen which reported no statistical differences in stress among men and women. However, Rogers et al. reported that female Irish dentists were more stressed than males.In the present study, there was no statistically significant difference in stress scores between younger and older dentists. However, dentists with fewer than 10 years of experience exhibited higher stress scores than dentists with over 20 years of experience. Previous studies have similarly indicated that experience is a factor in controlling and managing stress.(6,22) This could be attributed to reduced practical and clinical experience, a heightened fear of making mistakes and a lack of familiarity with patients.(22,23) Cooper et al. indicated that time management problems were a common source of stress among dentists.(6) In the current study, constant time pressures were also identified as a major source of stress; these pressures may lead to difficulties with time management and staying on schedule. This findings is consistent with previous research.(11) Time constraints may be a cause of stress for dentists due to the pressure to schedule as many appointments as possible or perhaps because it impinges on time with family or on other non-work-related interests. 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Previous studies have similarly indicated that experience is a factor in controlling and managing stress.(6,22) This could be attributed to reduced practical and clinical experience, a heightened fear of making mistakes and a lack of familiarity with patients.(23,24) Additionally, dentists in the present study who treated fewer than 12 patients per day had lower stress scores compared to those who treated more than 12 patients per day. This could be because of the additional patient load resulting in longer working hours, the increased need for concentration, time pressures, tiredness and the repetitive nature of the work. This finding is consistent with those of Ayers et al., in which time pressures had a significant impact on dentist stress levels.(21)No significant differences were observed between males and females in the current study with regards to occupational stress. 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