'Pain and stress are part of my profession': Using dental practitioners' views of occupation-related factors to inform dental training

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Background. Stress is prevalent among dental workers and students. A possible means to address this would be to include stress management programmes in undergraduate dental programmes. The purpose of this study was to establish how the current cohort of dental practitioners incorporate occupational health and self-care principles into professional practice, and their potential relevance to future curriculum design.

Objectives. To gain input from participants regarding stress and burnout – their causes, implications and prevention – as linked to their practice in dentistry.

Methods. A qualitative research design was used, with a purposive sampling technique. The study population consisted of dentists, dental therapists, hygienists and specialists. A total of 36 participants participated in four focus-group discussions to explore dental education, occupational health, stress and self-care. The data were thematically analysed.

Results. Dental training in the South African context, occupational health experiences, self-care, coping strategies and education were the main themes that emerged. Dental services in the public sector were reported to be overwhelmed by high patient volumes and shortages of staff and resources, which added to these stressors. The coping strategies adopted were exercise, stretching, reducing workload and encouraging teamwork. The participants believed that the causes of musculoskeletal disorders, and their impact, should be taught in dental training, as students do not perceive this as a potential problem. A multidisciplinary approach and teamwork training are the recommendations for curricula.

Conclusion. Stress management techniques and workplace posture assessment should be taught in preclinical training to make students aware of managing stress and correct working postures. A multidisciplinary approach should be used. Dental curricula should include occupational health safety principles.

Afr J Health Professions Educ 2018;10(2):96-100. DOI:10.7196/AJHPE.2018.v10i2.1005

Stress is prevalent among both dental workers and students. A study conducted among dental students in Malaysia found a 100% prevalence of stress.[1] Dental students' stress relates to their expectations of high academic achievements and excellence based on their previous academic records at school. The 5-year curriculum is stressful, with each successive year of study having a significant impact on the stress levels of students. This high level of stress in dental students calls for the implementation of stress management programmes in dental education.[2]

Dental education should serve as the starting point for the establishment of a healthy workplace that is free of stress. A healthy work environment is a valuable asset to a worker. It can sustain a healthy and productive work life, lowering incidences of work-based injuries and stress. Occupational health is not just an important factor in the personal health of the worker; if all principles are followed, it will improve productivity and work quality, increase work motivation, improve job satisfaction and improve the overall quality of life of the individual.[3]

The dental workforce involved with treating patients directly in South Africa (SA) is comprised of dentists, dental therapists, oral hygienists and specialists. For the purposes of this article, they will collectively be referred to as dental practitioners. Dental practitioners provide oral healthcare services in both the public and private sectors in SA.

A study conducted at an SA dental school revealed that most of the students experienced stress, with 45% showing signs of moderate stress and 42% severe stress. Nearly a quarter (25%) of the respondents wanted to quit or change courses, and a significant 3% (n=6) wanted to commit suicide. The researchers recommended that stress management be included early in the curriculum to equip students to deal with stress.[4] This is supported by research among newly qualified dentists in Hong Kong. The authors recommended that stress management be added to the curriculum, and stress management updates held for newly qualified dentists.[5]

The purpose of the present study was to establish how the current cohort of dental practitioners incorporate occupational health and self-care principles into professional practice, and their relevance to curriculum design. The objective of this study was to gain input from participants regarding stress and burnout – causes, implications and prevention measures – linked to their practice in dentistry.

Methods

This was a qualitative study conducted among dental practitioners in various fields, regarding their occupational health.

The study was conducted in KwaZulu-Natal (KZN), SA. A purposive sampling technique was used to identify participants. Data were collected

through focus-group discussions with dental practitioners. Four focus-group discussions were conducted between May and June 2017. A total of 36 dental practitioners participated in these focus-group discussions, which were conducted by the researcher (the first author). The focus-group discussions explored dental education, occupational health, stress and self-care. Each session lasted between 60 and 90 minutes.

This study forms part of a larger project. Ethical clearance was obtained from the Humanities and Social Sciences Research Ethics Committee of the University of KZN (ref. no. HSS/1490/015D). Written informed consent was obtained from all participants, who were informed of their right to withdraw from the study at any stage. All participants agreed to participate and to have an audio recording made of the interview. Anonymity of participants was maintained throughout the study by using participant codes instead of names. The participants filled out an anonymous demographic information sheet. The audio recordings were transcribed verbatim, and the transcripts checked for accuracy. Member check, or respondent validation, was conducted to establish validity. The data were then analysed thematically. Broad themes were identified, according to the main aim, and then further refined and coded until the final analysis was complete.[6] The themes identified were analysed in line with the objectives of this study.

Results

Five main themes were identified, based on the questions that were explored. The themes were identified, refined and grouped. Dental training in the SA context, occupational health experiences, self-care and burnout, coping strategies and dental education were the main themes identified. Dental training is hindered by lack of resources, lack of staff, focus on curative work and a lack of teamwork, all of which impact on the stress levels of staff and students. A brief description of each theme is given, followed by illustrative quotes (Tables 1 - 5).

Discussion

Dental practice in the current SA healthcare system is hindered by shortages of resources and staff, and equipment in facilities, and by malfunctioning dental chairs. The poor conditions in the clinical context are exacerbated by high volumes of patients. When dental staff are pressured into working long hours owing to high patient volumes, it impacts on their health, with repetitive tasks exacerbating the situation. Occupational stresses place the workers at risk of musculoskeletal disorders (MSDs). Repetitive tasks cause muscle fatigue and increase the use of joints, predisposing dental workers to joint injuries.[7,8] Comments from the practitioners showed that the development of a healthy workplace environment and practice should be prioritised to prevent work-based injuries. Poor working conditions, staffing problems and time pressures are common stressors. In a poorly resourced dental clinic, the stressors are greater, as is their impact on health.[9] Improving the work environment, supplemented by increasing access to resources, can improve morale and dedication among dentists. Job-enrichment strategies can be used to improve communication and facilitate contact among colleagues. Hakanen *et al.*[10] suggest promoting an increased variability of skills, which is unfortunately not the case among practitioners in KZN, as many of them perform mainly curative tasks. Early retirement of staff, long-term sick leave, loss in productivity, loss of income and increased need for medical care are some of the implications of occupational health-related conditions.[11]

One of the stressors that was strongly recognised in this study was lack of teamwork. Teamwork skills should be taught, and assessed as one of the core competencies to achieve during dental training; moreover, these skills should be learnt and practised during training. Working in a team reduces stress and creates a sense of value for workers. 'Learning together' for all oral healthcare students would foster teamwork.[12] Dental training occurs at various clinics in KZN. Dental practitioners are not trained together

Table 1. Dental work in the South African context

Subtheme	Quotes
Public sector dental services are overwhelmed by high patient volumes, compounded by a shortage of staff.	'Like in our place, you're looking at the public sector and we are short-staffed. So the number of patients is a problem. So you haven't got time for quality work.' (Focus group 1, participant 3) 'I think the whole structure of the oral health system – it really needs to be shaken up. Why are we seeing so many extractions?' (Focus group 1, participant 1)
The public sector is hindered by a lack of structural resources.	'Also at our place we are having a problem with the aircon. And all the windows are sealed in the hospital … There are days when it's extremely hot.' (Focus group 1, participant 3)
There is a marked divide between the services offered in the public and private sector in terms of patient numbers, resources and patient care, which affects service delivery.	'So the profile of the patient dictates in some way … it means you have to adhere to their requests and prioritise them. And that is in private. But in public, you still have the larger numbers.' (Focus group 1, participant 6)
Resource constraints affect service delivery and practitioner wellbeing	'In the current institute where I am, we have two chairs but they are not fully equipped. So we can do crowns, but we cannot do scaling so we only doing extractions. I worked there in a 7-month period and I ended up hurting my arm because of the repetitive nature. I went from working properly to doing no extractions at all.' (Focus group 1, participant 4) 'Healthy operator equals healthy economy. An operator is more useful to government working throughout their career.' (Focus group 1, participant 6)
Dental staff were disillusioned, as there was a lack of upward employment mobility.	'There is no growth once you enter the public sector, there is no room for growth.' (Focus group 3, participant 2) 'So no upward mobility as such even if you're kind of looking with binoculars.' (Focus group 3, participant 8).

Aircon = air conditioning.

Table 2. Occupational health experiences in dental work

Description	Quotes
Individual experiences as practitioners lead to various experiences with respect to the diagnosis of their occupational health disorders.	'I worked for 20 years before I started experiencing my problems. And I think I worked myself to such a point where I couldn't do it anymore. So I ignored the physical symptoms until I realised it was affecting the quality of my work. It did impact on the quality of my life.' (Focus group 1, participant 4) 'And this is after 19 years and I kept telling my colleague that I had pain. I couldn't move my shoulder. I just couldn't move. Every time I did, there was pain … But I started getting pain going down my arm, so I went for physio[therapy] and to see an orthopaedic. I told him about the extractions I do, so he put me off for a month.' (Focus group 1, participant 3) 'Dr A ended up with a musculoskeletal problem. 2014/15 she was doing her community service; she left after completion. Luckily, she was able to get permission to do a maximum of 40 per day before she left. Dr B – shoulder is compromised resulting in her being unable to do extractions! Dr C also suffers from wrist problems. There were days when we were tasked to do 90-odd patients.' (Focus group 1, participant 6)

Table 3. Self-care and burnout

Description	Quotes
Lack of collegiality and teamwork was an issue that had an impact on stress levels.	'You work with people who know you for who you are and they start questioning you. That was very disappointing.' (Focus group 1, participant 4) 'I think when you're working, each one must give their pound of flesh kind of thing. So it's kind of why am I doing your work kind of thing. (Focus group 1, participant 4) 'You feel like you not pulling your weight. Because when you want to do something but your hands are shaking like that, you feel like you can't do it, but you'll still do it anyway because you don't want to feel like you're not doing your job. So I think I will change my career, definitely. I have to change, because I have seen it. My uncle who's a maxillofacial surgeon also had to stop work. So it's scary for me.' (Focus group 1, participant 2)

Table 4. Coping strategies

Description	Quote(s)
Self-adopted coping strategies	'Now when I wake up, I stretch in the morning and it really has made a big difference, so we need to educate the students about this.' (Focus group 1, participant 3) 'I saw my 15, you must see your 15. So that's fair. We must share the workload, that's our motto.' (Focus group 1, participant 3) 'I was just doing scripts when I was in pain. I saw a physiotherapist, orthopaedic and a chiropractor.' (Focus group 3, participant 9) 'Without the swimming, without the Pilates, without physiotherapy, without lumbar corsets being put on myself, I would not be sitting here working. I would not be sitting here right now.' (Focus group 4, participant 4)

as a healthcare team at UKZN, since the institution currently only offers two programmes – dental therapy and oral hygiene. While the therapists and oral hygienists seemed to get along, this was not the case with dentists who may have trained at various other institutions in the country. In a study by Rafeek *et al.*,[13] students were prepared for and seemed confident in restorative and preventive dentistry, but not in practice management and teamwork. Dental curriculum development should focus more on the affective skills that are required after graduation. A study on teamwork in the UK showed that dental therapists felt valued, supported and consulted as part of a full dental team. However, in some cases, dental therapists felt that dentists were not listening to them, and that as therapists, they were given more preventive than restorative tasks. The dentists did not know the scope of dental therapy practice.[14]

Caring for patients was a priority for dental practitioners in the present study, and they treated patients who were experiencing pain. The dental practitioners in this focus group prioritised the health of the patients over their own, and this caused them further injury. Self-recognition and recognition of health problems should therefore be added to undergraduate training. The caregiver's role was investigated in a study by Leka and Jain,[15] and it was found that dentists idealised caring for and healing others.

Job content, lack of variety of work, underuse of skills and uncertainty of work conditions were identified as psychosocial risk hazards associated with

Table 5. Dental education

Subtheme	Quote(s)
Students were actively discouraged from the profession	'When the students come in, we literally scare them away from the profession because they look at me and I tell them what happened to me and they then think, should I be doing this?' (Focus group 1, participant 4)
Participants made suggestions about dental training	'A physical stretching session, get staff from various disciplines to assist.' (Focus group 1, participant 4) 'We need to talk about assertiveness training, like how do you assert your own limitations.' (Focus group 1, participant 6) 'Teach the causes of the MSD and its impact.' (Focus group 4, participant 1)
Students were seen as not interested in their own health and showing a lack of interest in self-care; they did not understand the implications of occupational hazards	'I have seen a lot of times that the students just don't stand in the right positions. I go to them and I tell them how to stand and what happens if you don't stand the right way. So I keep correcting them. The students say they want to sit where they can visually see everything, but the body posture is wrong.' (Focus group 1, participant 3)

MSD = musculoskeletal disorder.

the practice of dentistry in KZN. Furthermore, the lack of control over one's workload exacerbates the situation, causing physical and mental strain. The participants in focus group 1 reported that they lacked variety in their work, as they focused mainly on curative work and performing extractions. They wanted to do preventive work, but the clinics lacked the resources. Added stressors mentioned included the environment and equipment, e.g. heat in clinics, noise and lack of space. Poor organisational structure and communication in/by management, lack of support for problems and lack of personal development were also challenges reported by dental practitioners in KwaZulu-Natal.

Career development in the public sector is another factor that causes stress among dental practitioners – there is no career pathway for dental staff to progress along. Postgraduate studies are not incentivised, and there are no specialist programmes within the department for dental practitioners to move on to. Career progression strategies are required in the public sector.

Burnout is commonly seen in the 'caring professions', i.e. dentists, nurses, doctors, teachers and social workers.[10,15] In a Finnish study investigating coping strategies, the dentists felt dedicated to their work despite high job demands, emotional 'dissonance' and changes in the law regarding the worksite and one's work.[10] The study found that dentists with greater control over their job tasks, and those who try to improve themselves, are best equipped to deal with job demands. Hakanen *et al.*[10] concluded that by improving the work environment, we can enhance dentists' feelings of vigour and dedication through job enrichment approaches. The researchers in the present study found that dentists in the public sector perceived their dental practice as more demanding than service in private practices. More qualitative studies are needed of the psychosocial aspects of dentistry as experienced among private and public sector dentists in SA.

The practitioners in this study reported experiencing muscle pain, but continued their work despite these symptoms. Some received support in this issue from management, while others did not. Their quality of life was affected: some participants had problems sleeping, or could not play with their children, and simple chores at home were a problem. Some became physically ill, and opted to change careers.

Dentistry is a 5-year course, and dental therapy and oral hygiene are each 3-year courses. Preclinical and clinical training are covered in these years for all three courses, together with clinical practice and a large volume of lectures. This can be stressful for students, and although burnout is mainly seen among dental professionals, many researchers have seen it among dental students.[16] Acharya[17] found that the major causes of stress among newly qualified dentists and students in his study were practice-management issues, treating children, time pressure and fear of failure. Fear of facing one's parents after failure, followed by fear of failure itself, were the greatest stressors.

Stress is commonly seen in dental practitioners and undergraduates, and it is proposed that the ability to identify, perceive and manage it is an important attribute for health workers.[18] Burnout has been described as professional exhaustion,[19] and it is characterised by a loss of enthusiasm for work and a low sense of personal accomplishment.[16] Both the personal and educational environments can contribute to stress, but students perceived that workload and a sense of self-efficacy influenced burnout, as seen in a Columbian study where 7% (n=394) of students experienced burnout.[20] The participants in this study also found that students were stressed in clinics due to workloads and patient care.

Clinical supervisors reported that their students were not keen to correct their posture, as they did not experience pain. There is a need for change in this attitude, or these bad habits will be carried into professional practice. Students in clinical training benefit from feedback and demonstration. In daily feedback, it would help students if posture and ergonomics, as well as the specific clinical procedures, were discussed. Demonstrations of proper posture should be included in all clinical years of training, and not just preclinical. Prevention of percutaneous injuries should also be taught and assessed throughout training as these injuries were mentioned as a cause of stress. The inclusion of occupational health and ergonomics training in dental curricula has been suggested by many studies.[21,22] Injury prevention and dental ergonomics should be taught to dental practitioners, as these skills and knowledge are required to practice in an ergonomically correct position.[21,23-25]

A limitation of the present study was that it was confined to KZN, and did not cover the whole of SA. The study population does not represent all dental practitioners, but it nevertheless allowed the researcher to probe areas that could not be investigated in a cross-sectional study. Multiple focus groups were conducted to reduce bias, and the results and conclusions from all four focus groups were very similar.

Conclusion

The reported causes of stress and burnout among this cohort arose from lack of teamwork, high patient numbers, lack of job variation and poor

equipment. These dental practitioners incorporate exercise into their routines, seek professional help, lower patient load and share workload to cope with their professional practice. The participants recommended that clinical practice supervision should include a score for posture assessment in the daily assessment rubric. Students should also be taught to assess the arrangement of their equipment within the workplace in order to prevent harmful practice habits. Stress management techniques and workplace posture assessment should be added to the curriculum, especially in preclinical training, to make students aware of managing stress and correct working postures. A multidisciplinary approach should be used when teaching dental students about occupational health issues. Dental curricula, while overloaded in the second-last and final year, need to include occupational health safety principles and training. An interesting point that the participants raised is the lack of preventative dentistry in the public sector; while this is an issue for patient care, it also contributes to the rise in MSDs, as it means there is a lack of variation in dental work. Further research into delivery of patient care, via preventive dentistry service delivery, is required in SA. As an offshoot to this study, participants also recommended that a support group for dental practitioners be formed, as those who experienced pain stated that they felt a degree of isolation. This would create dialogue, to prevent self-isolation. It would be an opportunity to share experiences and to learn.

Acknowledgements. The authors would like to thank the participants for their valuable input.

Author contributions. RM: PhD student, all literature reviews, data collection and data analysis, interpretation of the results as well as manuscript preparation and writing. SN: PhD supervisor. JvW: PhD supervisor.

Funding. Department of Higher Education and Training Research Development Grant.

Conflicts of interest. None.

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Accepted 21 December 2017.