

Exploring perceptions of workplace-based risks and hazards: A study of dental assisting students at a South African university of technology

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ABSTRACT

Introduction

Dental assistants play a vital role in delivering four-handed dentistry and oral healthcare to patients. However, they face many risks and hazards at work that could negatively affect their physical and emotional health. These may range from mental health problems to chemical exposure, infectious diseases, and ergonomic issues.

Objectives

To explore the understanding of dental assisting students regarding potential occupational risks and hazards in the dental environment and to determine the awareness of perceived occupational risks and hazards using a self-administered questionnaire.

Methods

This cross-sectional, descriptive study used qualitative and quantitative research methods to explore the perspectives of student dental assistants regarding occupational health risks and hazards for data collection through open-ended and short answers.

Results

Seventy-six dental assistants participated in this study, yielding a (85.3%) response rate. The findings indicated that only 17% (n=13) of the participants had not received an orientation on occupational risks and hazards, and 59% (n=45) were unsure. Eighty-two percent (n=62) had been taught correct posture and sitting methods. Regarding psychological well-being, 53% (n=40) agreed to being

stressed, over 34% (n=26) indicated that the university offered various mental health services, and 86.6% (n=66%) expressed satisfaction with the current training.

Conclusion

This study highlights the critical need for comprehensive education, better ergonomics at work, and more robust preventative measures to protect dental assistants' health and well-being.

Keywords

Occupational health, hazards, risks, dental education, curriculum

INTRODUCTION

Students studying dental assisting are always at risk of occupational exposure because of inexperience during the educational process.¹ In addition, dental assistants may be underqualified, which raises the possibility of these dangers.¹

Dental assistants are vital to the dental practice and contribute to dental patients' health. They help to speed up treatment by preparing materials and assisting with procedures.² Because dental assistants are unaware of the potential risks at work, they are susceptible to illnesses, injuries and other occupational hazards.³ A few of these are radiation, noise, vibration-induced neuropathy, musculoskeletal diseases (MSDs), psychological illnesses, dental material exposure, percutaneous exposure incidents (PEI) and exposure to infectious agents such as bioaerosols.⁴

According to the World Health Organisation, a third of the lives of individuals worldwide will be spent at work, and between 30% and 35% of those people will face significant occupational risks.² Developing nations have a controversial situation regarding occupational health risks and hazards because of inadequate facilities in both rural and urban areas.⁵ According to Haas et al (2020), the upper extremity is particularly vulnerable to the tremendous impact dentistry has on the musculoskeletal system, and dental practitioners worldwide have a high prevalence of muscular-skeletal diseases (MSDs).⁶

According to Biradar and Narayan (2018), establishing preventive measures and raising awareness of potential workplace hazards can contribute to a safe dentistry environment for all parties.⁴ While the risks that other dental professionals face have been extensively documented, less emphasis has been paid to the risks that dental assistants

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1. Feziwe Kokela – study conception and design, data collection, data analysis, data interpretation and drafting of the manuscript
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face.⁷ According to Ohlendorf et al (2020), it is necessary to fully comprehend the kinds of professional risks that could occur at work and pay more attention to ergonomics in dental assistants' working practices, along with the precautions that must be taken to avoid them.^{4,8} Additionally, Ohlendorf et al (2020) noted that continued research into appropriate therapy and education is necessary to reduce the incidence of MSD; raising awareness among these professions is imperative.^{5,9}

Dental assistants face several occupational health concerns. Risk factors include instrument vibration, inadequate lighting, incorrect patient positioning and poor dental professional placement when treating patients.⁶ Fatima (2020) found in her literature that dental assistants are underqualified, which may lead to the emergence of occupational dangers.⁵ Many risks, such as biological, physical, chemical, biomechanical and psychological risks, are encountered by dental assistants.¹⁰ According to Siva Naga Yasaswi et al (2018), dentistry is perceived as a challenging field that starts at university and continues through clinical work after graduation.¹¹ Like in other medical professions, dentistry has several risky variables that put health professionals at significant risk if they disregard occupational health norms.¹² Literature research by Moodley et al (2018) indicates a correlation between dental labour and occupational risks and hazards such as musculoskeletal disorders, percutaneous injuries, stress and biological dangers.¹³

Biradar and Narayan (2018) also mentioned a substantial risk of infection from various microorganisms associated with the dental environment. Infectious microorganisms may be detected in blood or saliva due to bacteraemia or viremia linked to systemic illnesses.^{4,14}

According to pertinent research, everyone engaged can benefit from a safe dental workplace by being aware of these occupational risks and hazards and implementing preventive measures.¹⁵ For optimal patient treatment, a practitioner of oral health care must be in good health and able to work for lengthy periods, more so because pathogens can spread in a dental setting by direct contact with contaminated blood, saliva or other bodily fluids, or indirectly through contaminated tools, surfaces or materials.¹³

Numerous studies have been undertaken worldwide on occupational health issues pertaining to dental professionals; however, few studies have been conducted among dental assistants in Africa. According to Moodley et al (2018), there is a correlation between dental work and several occupational challenges, such as musculoskeletal disorders, percutaneous injuries, stress and biological risks.¹⁶

This research aimed to explore the understanding of dental assisting students regarding potential occupational risks and hazards in the dental environment and to determine their awareness of perceived occupational risks and hazards using a self-administered questionnaire.

METHODS

Research setting

This study was conducted at a university of technology in South Africa among dental assistants (n=76) based in the Free State. The University of KwaZulu-Natal Human and Social Science Research Ethics Committee granted ethical permission (HSSREC/0000/4922/2022). All the UKZN

HSSREC's policies and principles were followed throughout the study. Before the study commenced, gatekeeper permission was acquired from the appropriate heads of department.

Research design and analysis

A cross-sectional, descriptive method was used to explore the perspectives of student dental assistants regarding occupational health risks and hazards for data collection using a self-administered questionnaire. The data collected from the responses was analysed using SPSS version 29.0. The results will present the descriptive statistics in graphs, cross-tabulations and other figures for the quantitative data collected. Inferential techniques include using correlations and chi-square test values, which are interpreted using the p-values. The traditional approach to reporting a result requires a statement of statistical significance. A p-value is generated from a test statistic. A significant result is indicated with "p<0.05".

Data collection process

Student dental assistants (n=84) were invited to participate, and the study allowed students to participate if they wish to. Each participant received an information sheet and consent form, and they were free to discontinue participation at any time; anonymity was observed in this research. A self-administered questionnaire was used to collect data, and the completed questionnaires (n=76) were used to analyse the qualitative and quantitative data on occupational risks and hazards among dental assistants.

Validity and reliability

The study's questions were formulated to gather the necessary data, and their arrangement was impartial and consistent with validity.¹⁷ Internal consistency ensured reliability, guaranteeing that study participants were asked the same clear-cut, legitimate, and unambiguous questions to provide comparable results.¹⁷ The qualitative data included long-answer questions that explored the students' perspectives on occupational risks and hazards. A pilot study was conducted among ten dental assisting students to determine if the participants would understand the questionnaire; thereafter, minor changes were made to the research tool.

Results

The results and findings obtained from the questionnaires in this study are discussed below. The questionnaire was divided into sections measuring various themes and illustrated demographic data, occupational risks and hazards and psychological wellbeing.

Demographic data

The questionnaire was the primary tool used to collect data and was distributed. In total, (n=84) questionnaires were despatched and (n=76) were returned, which gave an (85.3%) response rate. Within the dataset, the distribution of gender was significantly weighted towards females, comprising 85.5% (n=65) of the cohort, as opposed to males, who accounted for 14.5% (n=11) (p<0.001). The age profile of the population was predominantly within the 18-25-year age group, 98.7% (n=75), and over 30; 1.3% (n=1) year categories were markedly less represented (p<0.001). The marital status revealed a substantial majority of single individuals, 97.4% (n=74), with married 2.6% (n=2) participants.

Psychological wellbeing

In this section, participants (n=76) were asked if they exercised and indicated the number of hours of exercise; 42% (n=32) said that they exercised and 56% (n=18) three times a week for 30 minutes. Nearly 53% (n=40) indicated that they were aware that exercising impacts their lifestyle. Almost all the participants, 76% (n=58), agreed that their mental health was more important than physical health.

The respondents were further asked if they feel stressed out and overworked as students by their studies, 37% (n=28) of participants agreed that they feel stressed out and overworked as students, yet there is also a substantial portion, 28% (n=21) that may not feel overworked or may not be willing to acknowledge it as stress ($p < 0.001$). Additionally, the respondents were asked if they were worried about their mental health. The following was observed: a total of 40% (n=37) agreed that they were worried about their mental health, which was a substantial proportion and indicates a high level of concern among students.

Qualitative data analysis

In this study, we explored the students' perspectives on occupational risks and hazards using open-ended questions as part of the questionnaire. Questions 1-2 have supporting statements from the participants.

Question 1: What coping mechanisms do you use when you are stressed out?

Physical activities and hobbies were popular for managing stress among participants, with 42% (n=32) agreeing to using exercise as their strategy; thus, offering both a distraction and a release of tension; social and emotional support was crucial for many and indicating the importance of having a trusted network to turn to.

"I just take few minutes to breathe and motivate myself to start again." (Participant 40)

"I usually go for a jog or walk to clear my mind. I listen to spiritual music to make me feel at ease." (Participant 88)

"I tend to read books almost every day. Exercise 3 times a day." (Participant 76)

"I usually eat a lot and hanging out with my friends; sometimes I cry out a lot; after crying, I motivate myself to stop stressing." (Participant 86)

"I always tell myself that this is a yearly course I'll manage. And also told myself that I cannot be stressed out by something that can't talk." (Participant 17)

Question 2: What sources of support does the university offer with regard to mental issues?

Of all the respondents, 34% (n=26), who agreed to get support from the university, the participants' responses suggested that the university offers various mental health services, primarily through counselling and therapy. A significant level of support is offered through academic channels, highlighting an integrated approach to student wellbeing; however, a few participants disagreed with these statements.

"Sessions with a psychologist are available." (Participant 38)

"There's a student campaign that focuses on mental issues and academic issues that engage with students wanting to know how are we performing or coping with all my academic." (Participant 70)

"Lecturers talk with students when they need some mental support and comfort students when needed." (Participant 28)

"Giving us toothpaste and money as some don't have enough money to buy stuffs." (Participant 15)

"They don't offer any help; instead, they add more stress with allowances." (Participant 72)

"Nothing." (Participant 33)

Occupational risks and hazards

Participants were asked if they had been taught correct standing posture and how to sit while assisting. Eighty-two percent (n=62) of the respondent's statements related to being taught correct posture and sitting methods. The graph below presents data on respondents' levels of agreement with statements related to their education on correct posture during standing and sitting while assisting.

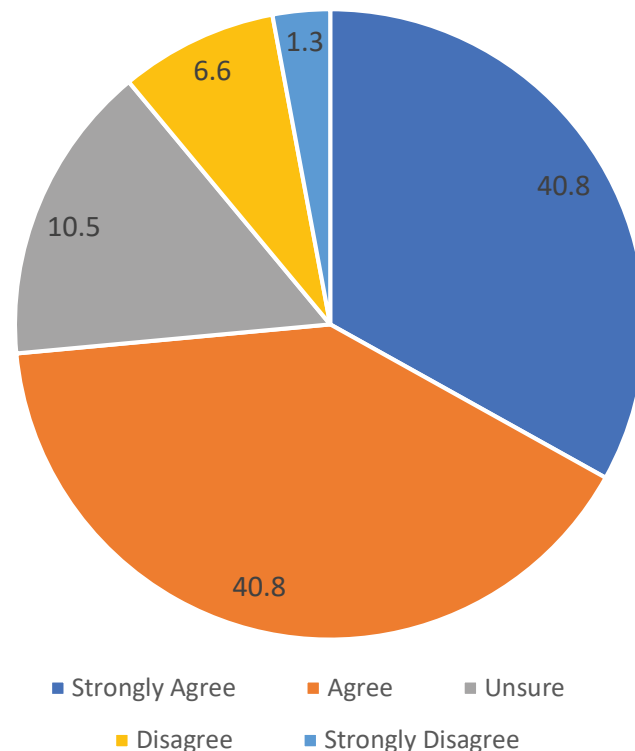


Figure 1. Posture and sitting

Participants were asked if they had received any orientation as students; 17% (n=13) did not agree, while a substantial number 59% (n=45), were not sure, and 24% (n=18) agreed to have received orientation. The questions about occupational risks and hazards were further broken down into sub-themes discussed below.

Table 1: Blood-borne Pathogen Safety Awareness

		Strongly Agree		Agree		Unsure		Disagree		Strongly Disagree		Chi-Square p-value
		Count	Row n%	Count	Row n%	Count	Row n%	Count	Row n%	Count	Row n%	
I'm aware that saliva may be a source of disease transmission	D1.1	52	69.3%	21	28.0%	2	2.7%	0	0.0%	0	0.0%	<0.001
I have been taught about the precautions needed when working with blood	D1.2	59	77.6%	16	21.1%	1	1.3%	0	0.0%	0	0.0%	<0.001
I make use of a mask while working	D1.3	63	82.9%	13	17.1%	0	0.0%	0	0.0%	0	0.0%	<0.001
I have been taught about needle-stick injuries	D1.4	59	77.6%	16	21.1%	0	0.0%	1	1.3%	0	0.0%	<0.001

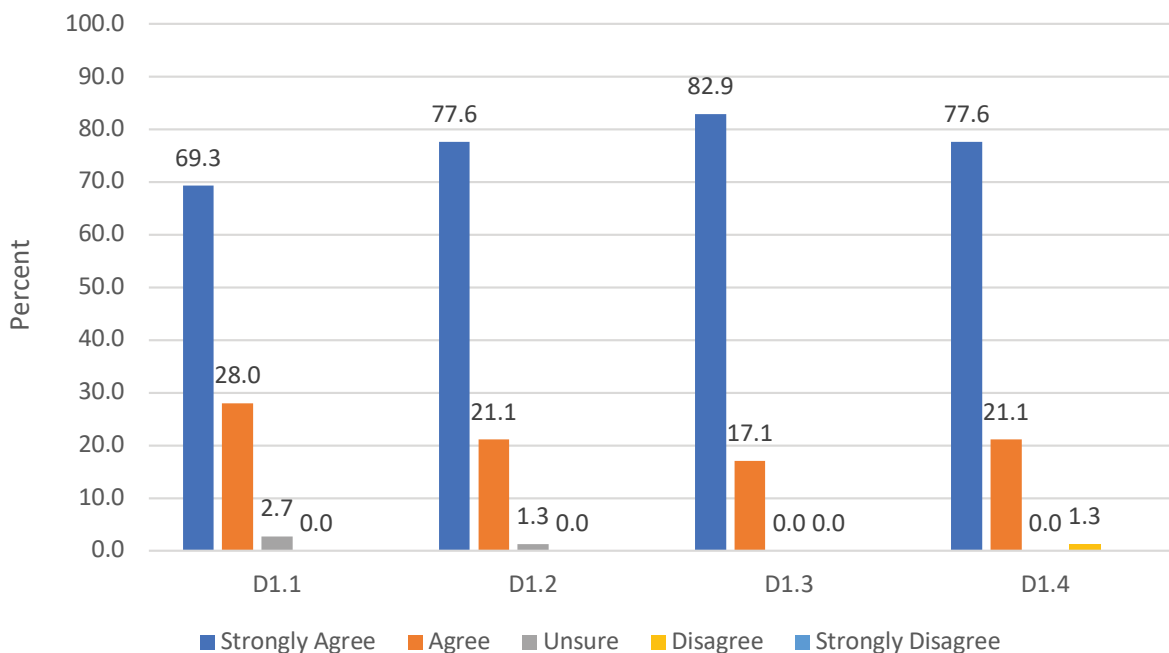


Figure 2. Blood-borne Pathogen Safety Awareness

The data suggests that respondents feel highly aware and educated about infection control and blood-borne pathogen awareness, ie saliva 69.3% (n=52) and being taught about needle-stick injuries 77.6% (n=59). Nearly 49% (n=37) of the participants indicated that they used tools that vibrate during training, and a substantial 67% (n=51) indicated that they do not use amalgam, with 23% (n=18) agreeing to use it and 9.2% (n=7) were not sure. Participants were asked about an extraction ventilator in their training sites; more than 43% (n=33) indicated having one, 15.8% (n=12) disagreed with ever seeing one and 34% (n=26) were unsure.

Furthermore, this study explored the students' perspectives on occupational risks and hazards using open-ended questions. Questions 3-7 follow with participants' statements.

Question 3: In the current curriculum, have you been taught about work-related health risks and hazards? If yes, please explain how.

Participants were asked to rate whether occupational risks and hazards were covered in the curriculum; over 86% (n=66) agreed that they had been taught about hazards, 11.8% (n=9) were not sure, and 1.3% (n=1) disagreed. Further, the participants' responses suggested that the curriculum emphasized the importance of wearing PPE and other protective measures to safeguard against potential health risks in dental practice.

"...been taught of dangers that arise from the dental materials, equipment and materials and certain methods to follow in case of medical related issues." (Participant 4)

"By wearing PPE, handling sharp instruments with care, avoid unauthorised places." (Participant 7)

"...yes in the notes we have, there is lectures about hazards and risks." (Participant 14")

There was a significant focus on managing sharp instruments and infection control, reflecting the high-risk nature of dental work environments.

"I have been taught that wearing PPE wear is a very important thing before you even start with working. And that you take precautions of sharp materials." (Participant 16)

"Putting dental needles in sharps container, anything that comes out of the patient's mouth in the red bin." (Participant 49)

"Taught how to handle needle and avoid needle pricks, how to wear PPE and protect myself from dental diseases that can be contaminated in the dental practice." (Participant 51)

Question 4: Have you received any orientation regarding occupational health as a student? If yes, please explain how.

Participants were asked if they had any receipt of occupational health orientation; 24% (n=18) agreed, 17% (n=13) indicated that they had yet to receive any orientation, and 59% (n=45) were not sure. The observation from the respondents who agreed was that orientation included both theoretical instruction and practical training, and there is a mention of formal modules, like dental assisting theory, which seems integral to the curriculum.

"I was shown how to operate the equipments and how to approach situations in the clinical environment." (Participant 16)

"The contents of the module dental assisting theory has parts of that in the beginning." (Participant 21)

"We were taught on what to expect when going to our practicals and what are we supposed to do as dental assistants in a practice." (Participant 34)

"The curriculum organised people professionally made to inform and give out orientation regarding occupational health." (Participant 22)

Question 5: Since I started training, I experienced pain or discomfort. If you agree, briefly explain the pain experience and where.

Participants 19.5% (n=15) reported that training appeared to involve extensive periods of standing, leading to various forms of musculoskeletal discomfort, particularly back and foot pain; some discomforts were associated with specific incidents or reactions to materials, which may require targeted interventions, while 43.4% (n=33) disagreed.

"After suctioning a patient, I had back pains, and my eyes were so painful as a result of curing light." (Participant 4)

"Ever since I started training, I experience ankle pains, and sometimes I knock off with swollen feet. I ended up buying crocs for comfortability." (Participant 6)

"I experience sinus and flu with my first practicals." (Participant 14)

"I experienced syncope but felt pain after falling as I regained consciences. Needle prick, but it did nothing, it did not infect me." (Participant 17)

Question 6: What could be included in the curriculum to inform students about occupational health while training?

The data from the participants suggested a need for more comprehensive and applied learning opportunities concerning occupational health.

"After every lecture of practicals, the lecturer must put a small section of occupation health for students up until they cover all the tips." (Participant 6)

"Assess risks involved in the department and implement safety measures." (Participant 9)

"Incorporating occupational health education into the curriculum can include stress management and preventive measures." (Participant 35)

"There must be a course that is dedicated to teaching about the risks included in dental assisting." (Participant 73)

Question 7: What changes do you want to see in dental training as a student regarding occupational risks?

Some respondents expressed satisfaction with the current training, 86.6% (n=66), while others sought specific improvements, 11.8% (n=9); furthermore, there was a call for more practical experience and improved facilities and equipment to ensure safety, 1.3% (n=1).

"Nothing everything is in a good state." (Participant 56)

"No changes must be done; everything is alright; there is enough training for students." (Participant 51)

"Practical class hours should be increased may be more than twice a week so that students can be more exposed to the dental procedures, equipments and instruments." (Participant 60)

"Precautions that are important before practicals outside the clinic start because we get shocked sometimes." (Participant 62)

"Students should be more informed about occupational risks before going to practicals." (Participant 69)

DISCUSSION

The data collected in this study set out to explore the students' perspectives regarding occupational risks and hazards in the dental environment. Anjum et al. (2019) observed that dental assistants who experience high levels of stress and burnout are linked to poor mental and physical health, which may impact their ability to provide patients with safe and healthy care. Most participants in our research indicated that they were aware that exercising impacts one's lifestyle and that their mental health is more important than physical health. According to another cross-sectional study by Maragha et al. (2023), the nature of the dental curriculum has led dental

students to report great stress while studying. The two most common causes of excessive stress were a heavy workload and fear of failing, while their go-to coping strategies were sleeping and watching television, respectively.^{18,19}

The findings in our study revealed that the respondents were worried about their mental health, and this indicates a high level of concern among students. A survey conducted by Bhayat and Madiba (2017) has indicated that over 90% of dental assistants are predicted to experience burnout.¹⁹ Furthermore, in this research, students agreed to be stressed out and overworked. However, there was also a portion of respondents that may not feel overworked or may not be willing to acknowledge it as stress. Many issues, including time constraints, position ambiguity, role conflicts, work overload, social support and a lack of authority in the workplace, can lead to stress and burnout in dental assistants.²⁰

The statements observed in our investigation concerning the healthcare and well-being of the students indicated participants who were worried about their mental health, as cited in a research report by Wali et al. (2021), a significant amount of stress was noted from participants because of the concern that patients might carry infectious diseases (Wali et al., 2021).²¹

Unmanaged stress can result in burnout.²² In support of the above, in the current investigation, we found that overall, the frequency and intensity of stress experienced by students, the overwhelming nature of their studies, and concerns about stress were high. The results further captured the psychological strain and discomfort related to students' academic demands. This single-factor structure suggests a coherent construct associated with the mental well-being of students under academic pressure. Additionally, research has indicated that over 40% of dental assistants working in public dental care were at high risk of burnout, according to a survey by Khammissa et al. (2022).²²

Furthermore, Malsam and Nienhaus et al (2021) cited that high-burnout dental assistants are more likely to be involved in and create more procedural mishaps that end in injuries connected to their jobs and endanger the health of their patients.²³ The likelihood of getting post-traumatic stress disorder rises as a result, and one can also safely handle and dispose of sharp objects and hazardous materials.²³

According to research by Bhagat et al (2022), programmes that support and foster open communication about risks and issues at work and provide access to help or counselling for anxiety and psychological stress management should be implemented.²⁴ Dental assistants can further reduce occupational risks and maintain a healthy work environment by prioritising safety and following best practices.²⁵ Similarly, in this research a high level of agreement is observed with the respondents. This suggests that most respondents feel their healthcare and wellbeing are prioritised in their educational environment.

Overall, the data suggests that respondents generally feel optimistic about their work environment and educational experiences, particularly regarding time management, healthcare and well-being, and education.

According to available research, dental offices should develop a thorough occupational health strategy to inform

their personnel and the public about the disease and lessen its effects.²⁶ We observed that in this study population, respondents' levels of agreement with statements relating to their education on proper posture when standing and sitting when assisting were much greater. Regarding poor posture and sitting, no assertions had a higher degree of disagreement. This suggests that the primary focus of this component is the training received in maintaining ergonomic practices to ensure physical health and prevent work-related musculoskeletal disorders. In agreement with this, Moodley et al's (2018) research indicates that dental staff members ought to receive training in dental ergonomics since these skills and knowledge are required for dentistry education and to enable them to practise in an ergonomically sound position.²⁷

Most dental schools around the globe provide their students with this kind of training in accordance with their curricula.¹⁶ Further to this, a study by Aghani et al (2018) suggests graduates would have the wrong posture for the job since they were not taught, not even implicitly, how to maintain their bodies in the right position by using ergonomic practises; one can reduce the chance of physical strain and damage.²

Both dynamic and static dental tasks can lead to musculoskeletal illnesses, according to research by Mahdi et al. (2021).²⁸ Nevertheless, dental students are frequently unaware of ergonomic factors' negative effects on their health. In dentistry, musculoskeletal disorders frequently manifest as pain, weakness, decreased touch sensitivity, itching, and numbness.² Regarding this study's curricular content, most respondents affirmed that their current curriculum included education on work-related health risks and hazards. However, a significant portion of participants were unsure about the inclusion of occupational health orientation in the curriculum, suggesting potential differences in how this component of their education was delivered or assimilated.

In existing literature conducted by Pillay and Moodley (2023), students' perceptions of clinical training, modules and teaching strategies, among other things, may help identify institutional issues and achievements.²⁹ Additionally, the comments may inspire modifications and fresh approaches to dentistry education.²⁹

Participants reported discomfort associated with adverse reactions to equipment, such as discomfort from eyestrain due to curing lights and pain from using old or improperly designed equipment. In comparison, other respondents indicated that they wore protective eyewear during procedures. This suggests that while most adhere to safety practices regarding eye protection, a subset may not, indicating potential areas for improved training or enforcement of safety protocols. Overall, the data suggested that students were aware of occupational hazards; however, an emphasis needs to be placed during training, as cited by Al-Aslami et al. (2018), that to reduce dental-related occupational dangers in the future and to improve dental products, education and training are essential components.³⁰ Still, evidence indicates risks associated with education and training.³⁰

In the current investigation, a substantial majority of respondents indicated a high level of awareness of needle-stick injuries and about the potential for disease transmission through saliva. Results in a study by Moodley and Naidoo

(2015) indicated that adopting safe work practices to minimise percutaneous injuries is likely the most effective way to stop the spread of blood-borne illnesses such as HIV and hepatitis.³¹ Sivakumar et al (2012) at a prosthodontic practice found that there is a possibility of encountering harmful chemicals, inhaling dust or vapours, becoming injured by fast-moving rotating machinery or breathing in flammable materials.³²

The findings in our study suggested that respondents felt highly aware and educated about infection control and blood-borne pathogen awareness, as also indicated by the high levels of agreement with a statement in this sub-theme of being taught about needle-stick injuries. These findings related to our study as most participants indicated using tools that vibrate during training. The respondents were further asked about the dental amalgam usage at their training site; most disagreed or strongly disagreed, suggesting that dental amalgam was not widely used among respondents in their clinical practice. In contrast, a smaller proportion agreed or strongly agreed with using amalgam which may reflect varying practices or preferences for dental restoration materials among clinics. Furthermore, the data suggested a moderate level of education about mercury-related illnesses. In summary, the data in this research reflected a trend towards a decreased use of dental amalgam in clinical settings among the respondents, with a significant preference for alternative restoration materials such as composite.

In accordance with our research, a cross-sectional study by Moodley and Naidoo (2015) revealed that percutaneous exposure events are still a big concern even though exposure to harmful pathogenic germs is a virtual risk.³¹ Moreover, dental professionals are in danger from pathogenic bioaerosols, dental product toxicity, contact dermatitis, noise-induced hearing loss and, most recently, an epidemic of musculoskeletal disorders.¹⁰ It was further noted in our research that it would be beneficial for training programmes to ensure that trainees are fully informed about the safety and control measures, including the presence and use of extraction ventilators, since 29% indicated the use of amalgam during their clinical training.

The results in our study suggested the need for improved compliance with protective measures during X-ray procedures and better communication about the safety facilities available at training sites. They also pointed to a disparity in the practical experience of taking X-rays, which could reflect differences in the curriculum or the facilities of the various training sites. Similar results were observed in research by Agrawal et al. (2014), where it was revealed that a professional aware of the many risks would be more equipped to take care of their personal health and work habits.³³ Overall, the data reflected a general awareness of some areas of uncertainty or non-compliance that may warrant further educational efforts or policy reinforcement regarding radiation exposure.

Therapeutic approaches such as yoga, acupuncture, weight training, physiotherapy, and stretching could help lessen the severity of MSDs.⁶ The HPCSA further stated that a healthcare professional must care for their health and well-being, recognise when another professional is in need, and act accordingly.³⁴ Additionally, Pillay and Moodley (2023) cited that feedback from students on instruction and learning should be welcomed as it can positively impact the creation of curricula.²⁹ Overall, the data in this study suggested

that respondents generally feel positive about their work environment and educational experiences, particularly in terms of time management, focus on healthcare and well-being.

CONCLUSION

Based on this research, the study found that while some dental assistants showed knowledge of specific risks, such as infectious diseases and radiation exposure, others only had a moderate comprehension of potential workplace risks and hazards. To ensure that prospective dental assistants are sufficiently equipped to protect themselves, this study recommends that dental assisting programs give comprehensive training on occupational risks and hazards, including prevention techniques.

This study's findings further suggested that even though the university programme featured orientation during practical sessions that teach students about occupational risks and hazards, the data collected indicates a desire to balance theoretical knowledge and practical skills with a strong emphasis on the safety and prevention of occupational risks. Respondents appeared to advocate for enhanced protective measures, better workload management and more focused educational work on occupational health. Despite some respondents being content with the status quo, there is a clear interest in the augmentation of the curriculum to better equip students for the risks in the dental industry. Educational content should be enhanced to include more detailed information on occupational risks and infection control.

The study also showed that public knowledge of occupational health risks and hazards is needed to provide students with a safe learning environment. This justifies the inclusion of these topics in education programmes and dental curricula; although these are already in place, the coverage needs to be increased and include training institutions.

RECOMMENDATIONS

This is the first research study to evaluate occupational risks and hazards among dental assisting students in the Free State. The participating university in the study will be presented with the research results, which will provide the basis to modify the current teaching module to improve student outcomes and training services. This study's results catalyse more research, noting the lack of research on occupational risks and hazards in the university. Although this research recognises that knowledge does not always translate into action, the disparities found in this study may be primarily resolved using occupational health hazards education, prevention strategies and better training services.

LIMITATIONS OF THE STUDY

The study participants were drawn from one place, so the results cannot be generalised to other departments. With its limitations, this study can provide insight into students' occupational risks and hazards. Further research about occupational health risks and hazards still needs to be explored in other dental training institutions.

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Conflict of interest

The authors declare no financial or personal relationship(s) that may have inappropriately influenced them in writing

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Contribution

The principal author (FFK) contributed substantially to the conception and design, data acquisition, analysis and interpretation of data. The co-author (RM) assisted with the discussion, literature review and questionnaire exploring occupational risks and hazards using open-ended questions. Both authors critically revised the article for valuable intellectual content and approved the final version to be published.

SUMMARY

Introduction

Occupational hazards are a side effect of dentistry and dental assistants are subject to various occupational risks. Their work's prolonged and immobile nature might result in musculoskeletal issues. Dental patients have small, narrow mouths and require extended, immobile seated postures and repetitive arm exercises. Dental assistants are subjected to extreme physical strain in their work environment.

Objectives

To explore the understanding of dental assisting students regarding potential occupational risks and hazards in the dental environment and to determine the awareness of perceived occupational risks and hazards using a self-administered questionnaire.

Methods

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Results

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Conclusion

This study highlights the critical need for comprehensive education, better ergonomics at work, and more robust preventative measures to protect dental assistants' health and wellbeing.

Keywords

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