

*Full Length Research Paper*

# Awareness and prevalence of career associated medical conditions in Dentistry among practitioners in Ghana

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The aim of this study was to assess the awareness and prevalence of career-associated medical conditions among Dental Surgeons, Dental Hygienists and Final year students at the University of Ghana Dental School. 55 volunteers were randomly selected for this study. They included 26 Dental Surgeons, Five (5) Dental Hygienists/Therapists and 20 final year dental student. A self-administered questionnaire was used to capture the data which was analyzed using Statistical Package for Social Sciences (SPSS) version 16. The age of the respondents ranged between twenty and sixty-six years. There was a high level of awareness (>90%) of the major career associated medical conditions. Human Immunodeficiency Virus infection (HIV) was the commonest occupational medical condition known. Over 40.0% of the total respondents had had needle stick injury before and 17.6% within the past 6 months. Sixty-five (65%) percent of the respondents had attended a workshop on the prevention of occupational hazards, while 75% of the respondents had no knowledge on the institutional policy on waste management. Although there was a high level of awareness of career associated medical conditions; the prevalence was still high which is indicative of poor practice and behavior towards preventive measures.

**Key words:** Career, dentistry, Medical condition, Occupational hazards, Personal protective equipment (PPE), burnout.

## INTRODUCTION

Career associated medical conditions in dentistry are conditions that affect individual practitioners during the care of their patients and are generally discussed under occupational hazards. An occupational hazard refers to a risk or danger as a consequence of the nature or working conditions of a particular job (Chopra et al., 2007, Jolanta et al., 1999). It can occur in the form of biohazards, health hazards (neuro-muscular and skeletal disorders, disruption of the respiratory and cardio-vascular systems, hearing and visual impairment, allergies and skin diseases (Prashant et al., 2011; Tošić, 2004).

Chopra (2007) stated that in the previous century, Dentists were exposed to a number of occupational hazards during their professional work and these caused the appearance of various ailments, specific to the profession, which developed and often intensified with years. However, modern dentistry has been described as probably among the least hazardous of all occupations (Al-Khatib et al., 2004). In spite of this, many risks remain in dental practices, which continue to challenge this status. The risk of cross infection is notable because many infectious agents may be transmitted from patient to dentist and vice versa (Castiglia et al., 2008); as dentists and their staff are in direct or indirect contact with traumatized tissues, saliva, and blood and aerosols on a daily basis (Hovius et al., 1992). Many clinical situations are the source of stress to a dental surgeon (Simon et al.,

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1994) and these include, among others, procedures connected with anaesthetisation of patients, overcoming of pain and fear, unexpected emergency situations in which a patient's health or life is in danger, or procedures with uncertain prognosis. Dentists are prone to professional burnout, anxiety disorders and clinical depression, owing to the nature of clinical practice and the personality traits common among those who decide to pursue careers in dentistry. (Robert et al., 2004).

Concerning substance abuse, the most commonly reported cause of impairment amongst dentists is chemical dependence (Deverall 1969). Most modern dentists report use of alcohol or other drugs, although according to a previous study more male dentists consumed alcohol as compared to female counterparts (Gambhir et al 2011). It is therefore important to ascertain the level of awareness of occupational hazards among practitioners and determine the common hazards and their mode of exposure and the preventive measures undertaken by practitioners. The aim of this study was to assess the awareness and prevalence of career-associated medical conditions in Dentistry among Dental Surgeons, Dental Hygienists and final year students at the University of Ghana Dental School. Although identification of risks to dental healthcare workers has been explored in several industrialized nations, very little data is available from developing countries. There has been no study on this subject in Ghana. The hope is that the findings here can throw some light on the subject and provide data for occupational health department who are involved in managing staff of the Dental School.

## MATERIALS AND METHODS

The study involved Dental Surgeons, Dental Hygienists/Therapists and final year dental students from the University of Ghana Dental School who voluntarily agreed to participate and was randomly selected.

Data was obtained through the use of self-administered questionnaires. Their age, gender, status (Student, Hygienist, or Dentist) were recorded. The questionnaire assessed the level of awareness, of career associated medical conditions, preventive measures undertaken and occupational hazards experienced. The questionnaire was pre-tested. Ethical approval was obtained from the Research Committee of the school. Data was captured using Microsoft Access version 2007. The data was analyzed using the Statistical Package for Social Sciences (SPSS) version 16 2007.

## RESULTS

Of the fifty-five questionnaires, fifty-one respondents were accepted for this study. Two were rejected because they were incorrectly filled out and two were not returned. These included 26(51.0%) Dental Surgeons, 20(39.2%)

final year students and 5(9.8%) Hygienists. The rate of response was 92.7%.

There were 26(51.0%) female and 25(49.0%) males. The age of the respondents ranged between twenty and sixty-six years. The majority of respondents (60.8%) fell in the 31-40 years age group.

In Table 1, over 90% of respondents were aware of the career associated medical conditions in dentistry on all factors considered except for the dangers of chemicals used in developing radiographs (developer/fixer toxicity) (78.4%)

Table 2 shows the prevalence of the career associated medical conditions. Over 70% of the Students (13) and Dental Surgeons (19) had experienced professional burnout. None of the Hygienists had ever experienced professional burnout and a significant number of the respondents had experienced patient related stress.

A high number of the total respondents 21(41.2%) had experienced Needle stick and sharp injury before and within the past six months. The breakdown per the various groups is presented in Table 2.

On the preventive measures used Forty-two (82.4%) of the total respondents always washed their hands with soap before attending to patients whilst 4(8.7%) respondents washed their hands sometimes with soap. Seventy-five percent (75%) of the study group had no knowledge on the institution's policy on waste disposal and 35.3% of them had never attended any workshop on prevention of occupational hazard.

Comparing the level of awareness among the various groups, there was no significant difference in the level of awareness for stress and biological hazards. The dentist had a higher knowledge of physical hazards compare to the others.

## DISCUSSION

There was a high level of awareness (>90%) of the major career associated medical conditions in Dentistry among the study population. This agrees with studies in Nigeria (Fasunloro and Owotade 2004) and India in which all the respondents were aware of the career associated medical conditions (Chopra et al 2007).

The high level of awareness amongst the study group was consistent with the number of respondents (65%) who had attended a workshop on the prevention of occupational hazards. This study found out that only 13.3% of the respondents were aware of the institutions policy on waste disposal. This might be due to the fact that the institution's policy on clinical waste disposal and legal hazards has not been well disseminated.

Over 41.2% of the total respondents had had needle stick or sharp instrument injury before and within the past 6 months; this is high compared to 36.8% in Nigeria (Fasunloro and Owotade 2004) but lower than 47.06% in India (Chopra et al., 2007).

**Table 1.** Level of awareness of career associated medical conditions.

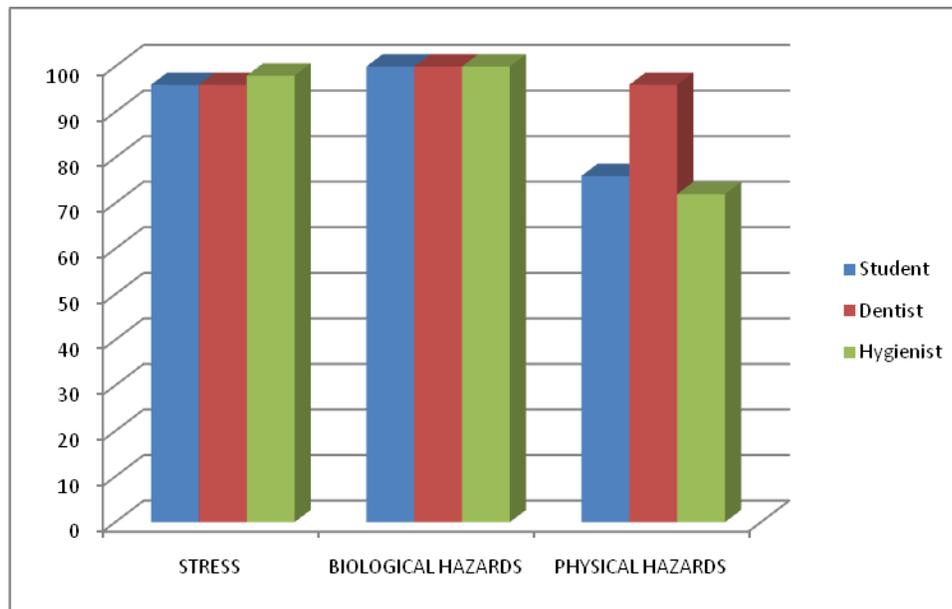
	NUMBER AWARE	PERCENTAGE (%)
<b>STRESS</b>		
Professional burnout	49	96.1
Patient related stress	49	96.1
Dentist/academic related stress	49	96.1
<b>BIOLOGICAL HAZARDS</b>		
Hepatitis B	50	98.0
HIV	51	100
<b>PHYSICAL HAZARDS</b>		
Musculoskeletal	49	96.1
Eye/Ear injury	47	92.2
Allergy to latex	48	94.1
Needle stick/sharp instrument injury	50	98.0
Developer/fixer toxicity	40	78.4

MEDICAL CONDITION	INCIDENCE AMONG THE VARIOUS GROUPS					
	Dentists		Hygienists		Final year students	
	N	%	N	%	N	%
Professional Burnout	19	73	0	0	15	75
Patient related stress	20	77	1	20	16	80
Needle stick/sharp instrument injury	4	15	4	80	4	20
Needle stick injuries in past 6 months	4	15	4	80	1	5
<b>MUSCULOSKELETAL</b>						
Headaches	11	42	2	40	9	45
Ear/Eye injury	3	12	2	40	5	25
Neck/Shoulder pain	19	73	3	60	10	50
Low back pain	20	77	5	100	12	60
Hand wrist Pain	17	65	4	80	11	55
Allergy to latex	7	27	2	40	1	5

**Table 2.** The prevalence of some career associated medical conditions.

This shows that needle stick and sharp tip injuries and the associated complications are common in dental practice and therefore the reduction in the rate with proper preventive measures is needed. The high incidence of needle or sharp instrument injury observed in this study makes hepatitis B vaccination mandatory for all persons working in the clinical areas. In this study, 88.2% of the respondents were vaccinated against Hepatitis B viral infection. This observation was higher than the reports (68.4%) from Nigeria (Fasunloro and Owotade 2004) but fell short of the 100% findings from India (Chopra et al., 2007). Dental practitioners are exposed to cross infection as a result of the continuous contact with body fluids and

aerosols from patients. Personal protective equipment (PPE) which are designed to protect the skin and the mucous membranes of the eyes, nose, and mouth from exposure to blood and saliva, is a necessity in the clinical environment. In this study a significant number of practitioners used PPE such as gloves, surgical masks (94.1%), protective eyewear (80.4%), face shields, and protective clothing. The findings in this study compared favorably to a similar study in Ontario, Canada where 91.8% of Dental Surgeons, always used gloves, 74.8% always wore masks and 83.6% always wore eye protection (Gillian et al., 1999). Pūrienė et al. (2007), found dental practice to be quite stressful and physically demanding.



**Figure 1.** Comparison of the level of awareness of career associated medical conditions in dentistry in the various categories of respondents

The prevalence of professional burnout and patient related stress was very high among the respondents. It is interesting to note that although 70% of the students and Dental Surgeons had experienced professional burnout none of the Hygienists had suffered professional burnout. The high incidence of professional burnout reported within the final year students may have been due to the extra demand from them to meet academic and clinical requirements as final year students.

Work related musculoskeletal disorders were common among the respondents in this study. This may be attributed to improper posture of the dental practitioner, the improper workstation setup which includes: Dental surgeons or patients chair being too low/ high, Chairs have poor back support, using the intra-oral mirror during examination rather than bending to inspect the mouth (ergonomics) during treatment of dental patients. Oral health practitioners acquire this bent posture as a result of using direct instead of indirect vision technique when working on the maxillary teeth. In our study 63% of the practitioners used indirect vision sometimes and 25% used it always. Though practitioners are aware of preventive measures they don't always practice these measures

## CONCLUSION

Over 90% of all study categories were aware of career associated medical conditions in dentistry. This study showed that even though there was a high level of awareness; the overall prevalence was still high among

the various categories with over 40% incidence of needle stick/sharp instrument injury which is indicative of poor practice and lack of strict adherence towards preventive measures.

## RECOMMENDATION

We recommend that institutions have well-defined policy guidelines on waste disposal and management and educate the oral health practitioners to reduce the incidence of career associated medical conditions in dentistry and also countries should have legal hazards for the practice of Dentistry.

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