



RESEARCH ARTICLE

OCCUPATIONAL HAZARDS AMONG DENTAL TECHNOLOGISTS IN SAUDI ARABIA

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Occupational Hazards Among Dental Technologists in Saudi Arabia.

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Abstract

Objective: The current study seeks to determine the occupational hazards affecting dental technologists working in government institutions in Saudi Arabia's capital city, Riyadh. The researcher will assess the practitioners' awareness, perception, exposure to, and the prevention measures applied in limiting occupational hazards within the selected facilities.

Method: The current study entails a cross-sectional designed quantitative investigation to explore the occupational hazards affecting dental technologists operating in governmental healthcare units and laboratories based in Saudi Arabia. In general, the experiential examination incorporated a sample population of approximately 100 registered dental technologists.

Results: The findings of the study revealed substantial insights with regards to the issue of occupational hazards among dental technologists, especially in Saudi Arabia's government facilities. the outcomes of the study ascertained a significant P-value of (P-value of 0.00 ($p < 0.00$)), supporting the need for the regular awareness campaigns.

Conclusion: while the findings of the subsequent study are valid and reliable, additional studies should be conducted to further examine the issue of occupational health hazards among dental technologists.

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Introduction:-

Based on the insights from the embodiments of pre-existing evidence-based sources, it is noteworthy that dental technologists comprise at-risk healthcare experts¹. The prevalence of dental technologists to the potential clinical related threats is due to the frequent exposure to body fluids, including saliva, blood, and tissues from patients¹. The subsequent body fluids often encompass micro-organisms from the patients that may present a significant risk of infections to dental technologists. Further, dental technologists face the probable hazards of burnouts resulting from overworking, which subject them to psychological problems/diseases. Adequate knowledge about the dental technologists' overall work environment, involving chemical, mechanical, biological, and social factors, is vital to enabling the associated medical experts and stakeholders to devise suitable measures to mitigate the prevalence of the respective hazards.

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Within the past few decades, the vast array of empirical studies has endeavored to explore the issue of occupational risks, especially with regard to dental technologists. For instance, as evident from the experiential investigation there are potential threats of chemical exposure, as well as the high level of toxins correlated with dental technologists' professional environments². However, despite the literary contributions of the pre-existing secondary sources concerning the proposed study topic, there is still limited knowledge about the dental technologists' overall workplace risks, especially in Saudi Arabia. The main aim of this research is to explore and ascertain the dental technologists' awareness of occupation hazards, their perception of the underlying health threats, individual experience with the hazards, and the prevention measures often employed to regulate the prevalence of these risks in Saudi Arabia. In this perspective, the current paper endeavors to offer essential insights into the outcomes of the aforementioned research issue, as evident from the comprehensive analysis of the derived experiential data.

Research Overview:-

The fundamental objectives of this study constituted establishing the workplace risks affecting dental technologists in Saudi Arabia's government healthcare centers. Similarly, the research endeavored to examine the viewpoints, exposure, and awareness of the underlying occupational risks among dental technologists. The study also explored the prevailing mitigating measures set within the sphere of dental technologists' workplace environments to reduce the probable emergence of the respective occupational hazards. In this perspective, it was hypothesized that dental technologists are exposed to varied risks in their job places, which often impose adverse implications toward their performances and positive health developments.

Methodology:-

The current study entails a cross-sectional designed quantitative investigation to explore the occupational hazards affecting dental technologists operating in governmental healthcare units and laboratories based in Saudi Arabia. In general, the experiential examination incorporated a sample population of approximately 100 registered dental technologists (p-value of 0.01 ($p < 0.01$)), with at least a year of work experience using the purposeful sampling technique. During the study process, each of the respondents was issued a copy of the closed-ended questionnaire via email. The resulting data was statistically analyzed using the SPSS (version 22) data tool.

Results:-

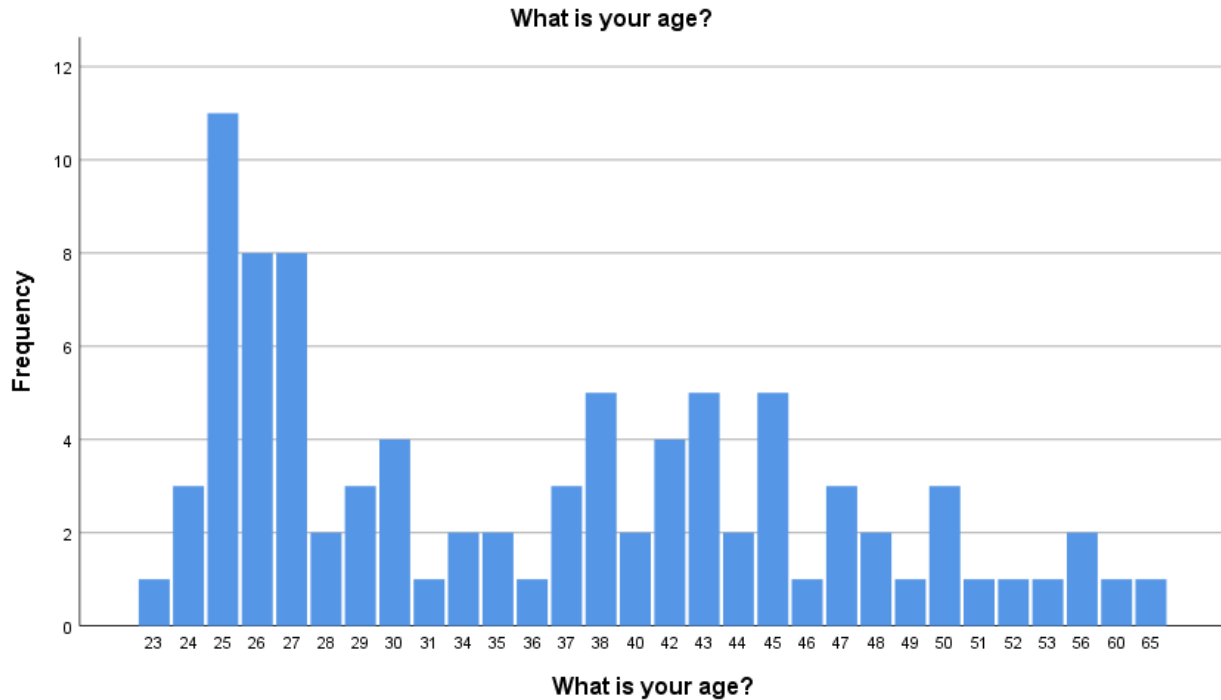
The findings of the study revealed substantial insights with regards to the issue of occupational hazards among dental technologists, especially in Saudi Arabia's government facilities. To begin with, the age distributions for the involved study participants ranged from 23 to 65 years. Regardless, as evident in Graph 1 below, the vast majority of the subsequent participants were aged between 25 and 27 years, with 25 years scoring the highest frequency. Notably, as indicated in Table 1 below, the outcomes of the study ascertained a significance P-value of (P-value of 0.00 ($p < 0.00$)), supporting the need for the regular awareness campaigns.

Table 1:- Sample Statistics for Regular Awareness Campaign.

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Awareness campaign / courses workshops should be held regularly.	91	4.24	.993	.104

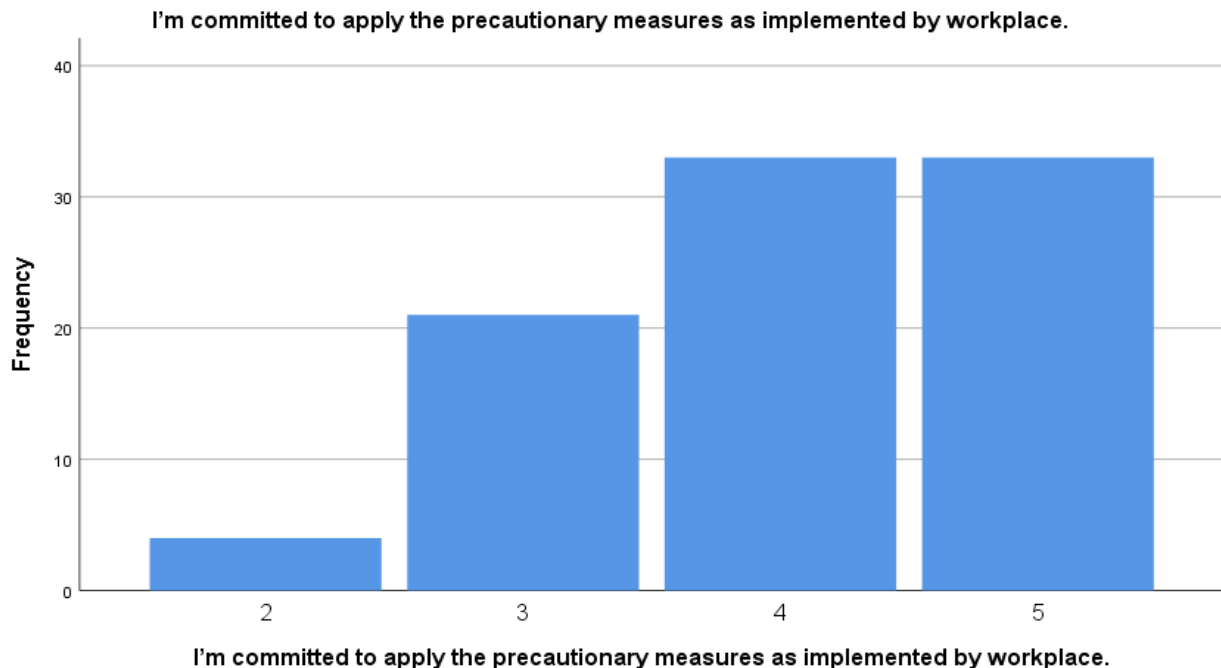
Table 2:- P-Value Significance.

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Awareness campaign / courses workshops should be held regularly.	40.764	90	.000	4.2	4.0	4.45

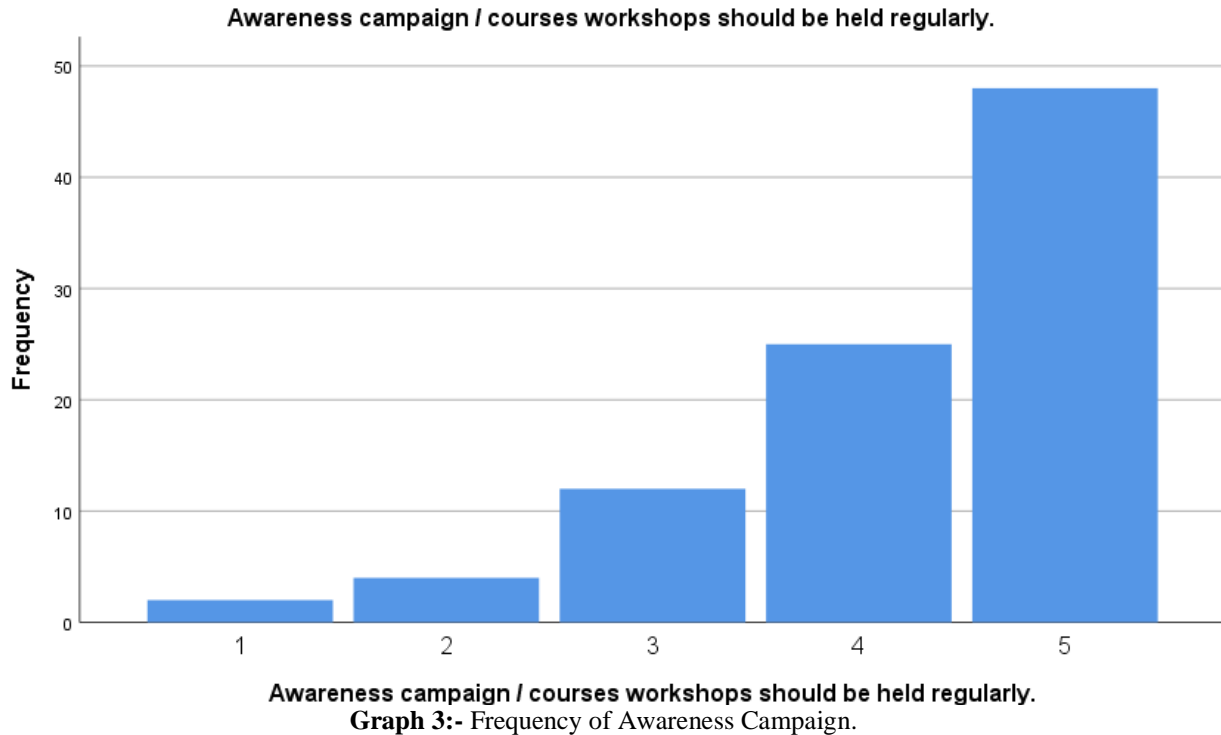


Graph 1:- Age Distribution Frequency.

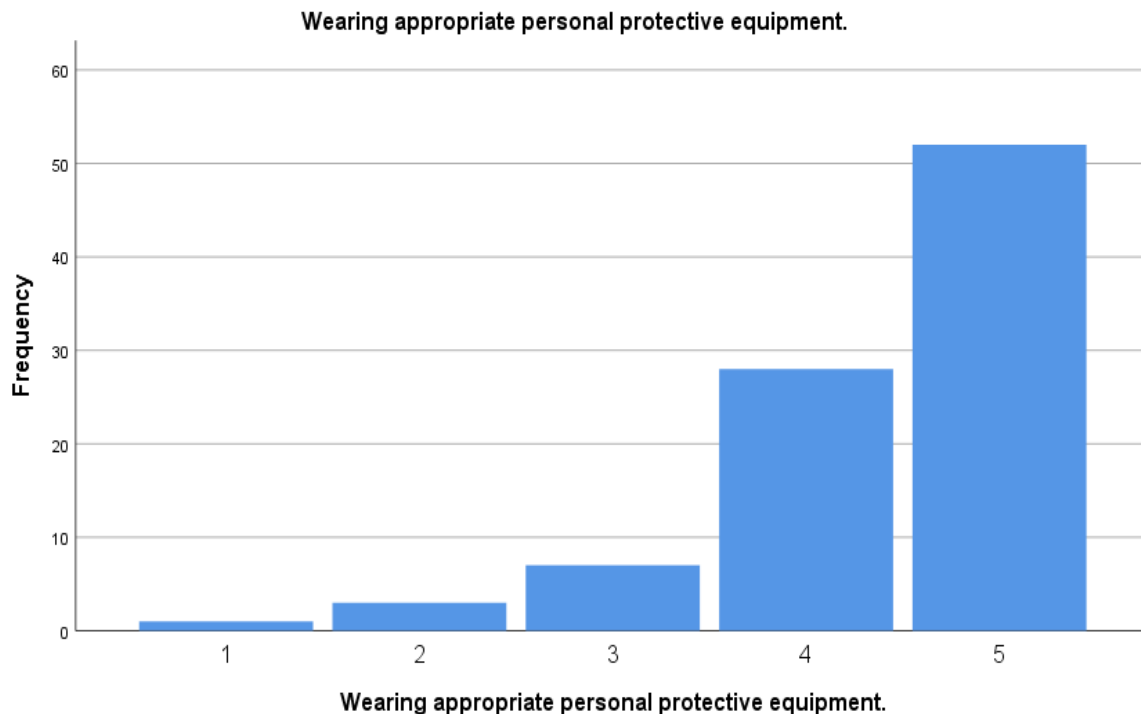
In this case, the study examined approximately 20 variables involving assessment of individual experiences with physical, biological, and ergonomic risks within the dental technologists' workplace environment, as well as their frequencies of implementing precautionary measures. Furthermore, the investigation examined the respondents' level of awareness and engagement in the underlying educational programs, campaigns, or workshop training associated with occupational hazards. For instance, as evident in Graph 2 and Graph 3 below, it is noteworthy that the rate of individual exposure to occupational risks among the respondents is relatively high. Comparatively, most respondents supported the need for regular implementation of workshop training and campaigns.



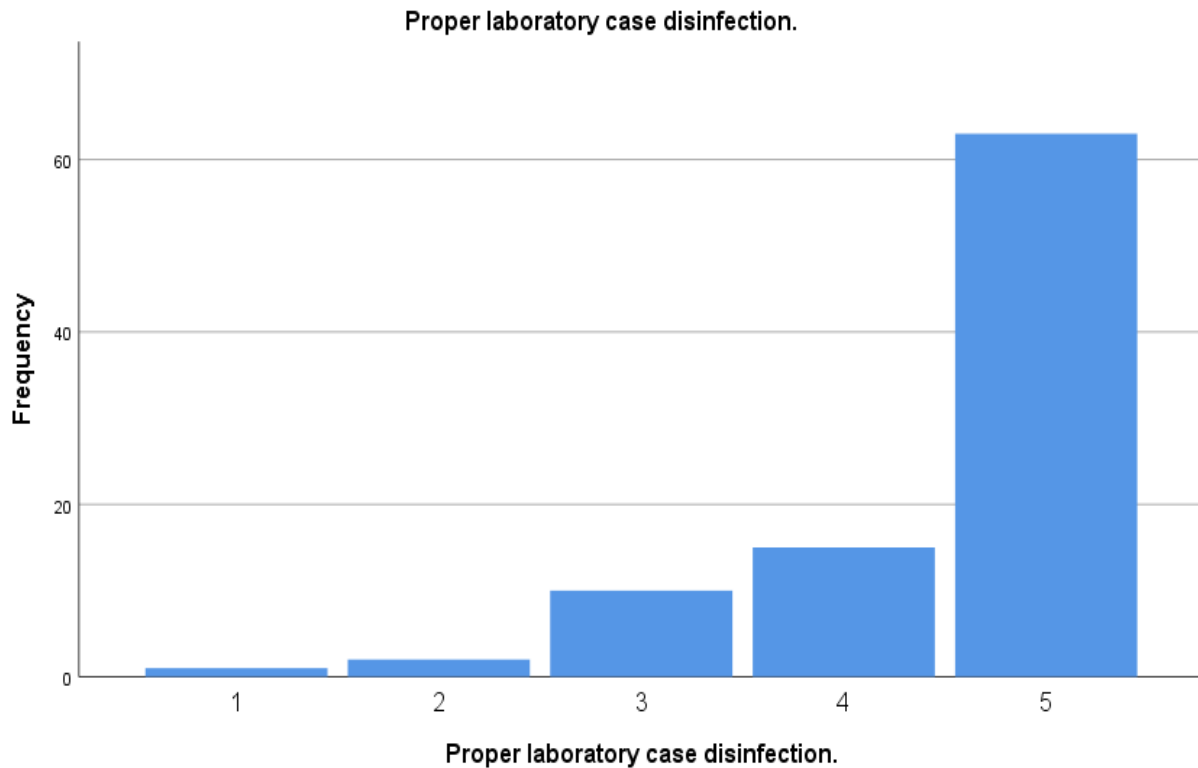
Graph 2:- Frequency of Precautionary measures Implementation.



Moreover, despite the frequent occurrences and severity of occupational hazards, particularly in government laboratory facilities in Saudi Arabia, it is logical to note that vast majorities of dental technologists operating in these sites greatly observe or adhere to the pre-existing precautionary measures. Precisely, as supported by Graphs 4 and 5 below, more than 75 percent of the total participants indicated the need for dental technologists to be supplied with or constantly wear appropriate personal protective gear in the workplace.



Graph 4:- Frequency Distribution for Wearing Appropriate Personal Protective Equipment.



Graph 5:- Frequency Distribution Bar for Proper Laboratory Case Disinfection.

Another essential finding of the study entails the issue of individual exposure to any form of occupational risks in their areas of expertise. Based on the insights of the following tables, it is worth noting that a substantial population of dental technologists in the region has experienced certain types of occupational hazards in their work environments.

Table 3:- Experience with Hearing Disorder while Polishing Devices.

Have you experienced any hearing disorder while or after working on the polishing devices or any other high-frequency devices?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know	8	8.8	8.8	8.8
	No	47	51.6	51.6	60.4
	Yes	36	39.6	39.6	100.0
	Total	91	100.0	100.0	

Table 4:- Experience with Respiratory Disorder during Waxing.

Have you experienced any respiratory disorder during the waxing procedures?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know	10	11.0	11.0	11.0
	No	48	52.7	52.7	63.7
	Yes	33	36.3	36.3	100.0
	Total	91	100.0	100.0	

Table 5:- Experience with Skin Allergies or Respiratory Disorder.

Have you experienced skin allergies or respiratory disorder while working on acrylic substance?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know	7	7.7	7.7	7.7
	No	41	45.1	45.1	52.7
	Yes	43	47.3	47.3	100.0

	Total	91	100.0	100.0	
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Table 6:- Experience with Respiratory or Skin Disorder.

Have you experienced any respiratory or skin disorder caused by the fumes from the laboratory oven or the heat of the metal while working on the finishing stage?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I don't know	9	9.9	9.9	9.9
	No	32	35.2	35.2	45.1
	Yes	50	54.9	54.9	100.0
	Total	91	100.0	100.0	

Discussion and Conclusion:-

Based on the insights of the above study findings, it is apprehensible that occupational hazard is a critical and profound issue among dental technologists. Considerable numbers of dental technologists have been exposed to or encountered specific forms of occupational hazards. According to the derived research data, the underlying occupational risks generally trigger distinct forms of health complications to the victims. Some of the common disorders associated with the aforementioned workplace hazards include respiratory conditions, skin disorders, skin allergies, vision disorders, and hearing disorders.

Regardless, most of the laboratory facilities are equipped with proper precautionary measures and protective gears to reduce the risk of exposure to occupational hazards among dental technologists. It was also clear that numerous dental technologies encompass adequate knowledge and experiences with regards to the unfolding occupational hazards in their work environment. In conclusion, while the findings of the subsequent study are valid and reliable, additional studies should be conducted to further examine the issue of occupational health hazards among dental technologists.

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2. Sivakumar I, ArunachalamKS, Solomon E, Occupational health hazards in a prosthodontic practice, Review of risk factors and management strategies, . The Journal of Advanced Prosthodontics, 2012, 4(4), 259–265.