

Evaluate of the Level of Awareness' Towards Policies of Safety Measures among Endodontic Staff at Selected Dental Clinics, Saudi Arabia

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Abstract: Background: Despite the highlighting on policies of safety measures in dental clinics, few organizations have Evaluated the extent to which safety is a deliberate priority or their culture supports patient safety. In response to the Institute of Medicine's report and to an organizational dedication to patient safety, the current research was conducted an efficient measurement of safety measures is implemented. Objective: To evaluate the level of awareness' towards Policies of Safety Measures among Endodontic staff at the selected dental clinics, Saudi Arabia. Method: A cross-sectional survey was conducted at five dental clinics, Saudi Arabia. A32items self-administered questionnaire was provided to 200 Endodontic staff in the research setting based on their area of their specialties to Evaluate the level of awareness' towards Policies of Safety Measures among Endodontic staff at the selected dental clinics, Saudi Arabia. Results: This study finding showed that awareness towards Policies of Safety Measures among some Endodontic staff at dental clinics was variable. The majority (87.0%) of the Endodontic staff had a high level of awareness towards Policies of Safety Measures in relation to for "HCWs with non intact skin should not be involved in direct patient care until the condition resolves ".On the other hand (69.5%) of the Endodontic staff had a lowest level of awareness towards Policies of Safety Measures in relation to Used needles can be recapped after giving an injection" as well as (69.5%) was in the aspect of Blood spills should be cleaned up promptly with sodium hypochlorite" .While, concerning the Intermittent Level of Awareness the highest level was awareness towards Policies of Safety Measures in relation to ""Isolation is necessary for patients with blood-borne infections" "(8.5%).While, regarding the Low Level was in the item of Universal precautions are not necessary in situations that might lead to contact with saliva. Although, the highest percentage concerning the low level of awareness towards policies of safety measures (27.5%) was in the aspect of Universal precautions are applied to patients with HIV and viral hepatitis only". While the lowest level in such item (15%) was in the aspect of For decontamination of devices (with only contact with skin) washing with usual detergent is enough". Conclusions: The current study results revealed that there were high levels of awareness among the Endodontic staff towards policies of safety measures within the study setting.

Keywords: Policies of Safety Measures; Awareness; &Endodontic staff

1. Introduction

Progressively, healthcare organizations are becoming aware of the significance of transforming organizational culture in order to improve patient safety. Growing interest in safety culture has been accompanied by the need for evaluation tools focused on the cultural aspects of policies of safety measures development efforts. Safety culture evaluation could be utilized as a tool for improving patient safety. It could also describe the characteristics of culture appraisal tools presently available and discusses their current and potential uses, including brief examples from healthcare organizations that have undertaken such evaluation. (Odd Cathrine, et al., (2007).

An aspect of practice in job-related and environmental health nursing has greatly expanded with increased emphasis on health promotion and health protection services. Many factors have predisposed the evolution of occupational health practice. Among them are the changing population and workforce, the introduction of new chemicals and work processes into the work environment, increased work demands, technological advances and regulatory mandates, increased focus on illness/injury prevention, and a rise in health care costs and workers' compensation claims. (Sullmaby, 2015).

According to Duffy, et al., (2011)., timely reporting of occupational exposures to an employee health service is required to ensure appropriate counseling, facilitate prophylaxis or early treatment, and establish legal prerequisites for workers' compensation. Failure to report exposures precludes interventions that could benefit the injured party, placing health care workers at unnecessary risk. Information is limited regarding the prevalence of needle stick injuries, the circumstances surrounding them, and the barriers to reporting them. We conducted this study to investigate the prevalence and context of needle stick injuries and behavior associated with the reporting of injuries among a large number of surgeons in training.

Hazards caused by non adherence to universal precautions by the health care providers, statistics reported by the Central Register of Occupational Diseases in Poland indicates that among 314 new cases of occupational diseases in HCWs in 2005, HBV and HCV represented 42.6% of all cases.⁹ Despite the substantial reduction in HBV infection since vaccination was introduced in 1989, the incidence of HCV hepatitis in Poland is still on the increase in this occupational group. (Rapiti, et al., 2005).

Endodontic staff should have a high level of awareness about Policies of Safety Measures enhance consciousness education has not been prominent among health care workers, particularly in developing countries. To the greatest

of our understanding, the attentiveness of Endodontic staff in relation to knowledge and awareness about policies of safety measures within the work setting. Consequently, conducted this study to Evaluate the level of awareness' towards Policies of Safety Measures among Endodontic staff at the dental clinics, Saudi Arabia.

2. Participants and Methods

This study was conducted in March, 2014 among Endodontic staff at the dental clinics, Saudi Arabia. The study was granted ethical approval by the clinics ethical committee.

The participants were selected from the selected dental clinics. After signing an informed written consent form, the questionnaire was given to each participant. Before administration of the questionnaire, the purpose of the study was explained to each respondent and confidentiality of the information guaranteed.

The research was carried out by one of the authors who were appropriately trained in administering the informed consent and the self-report questionnaire to the participants. In this cross-sectional study, a structured questionnaire prepared by the authors, was administered to the participants. A 32-item self-administered structured questionnaire about awareness' towards Policies of Safety Measures among the selected Endodontic staff, who advised de novo and tested.

Incorporated a full range of response options, designed to identify the practitioner's level of to Evaluate their level awareness' towards Policies of Safety Measures among

Endodontic staff within the selected setting. Prior to distribution of the questionnaire, a pilot study was done on a selective group of health care workers who were asked to fill out the questionnaire and return it back with their remarks and criticism. Minor changes were then made to the final tool.

Groundwork part of the questionnaire consisted of demographic information such as occupation, age, gender, and the marital status. The second part of the questionnaire comprised of questions regarding their level of awareness' towards Policies of Safety Measures among medical staff. This part also Evaluated awareness' towards Policies of Safety Measures. It took approximately 15 minutes to complete each appraisal.

The level of awareness' towards policies of safety measures among Endodontic staff among Endodontic staff at the dental clinics, Saudi Arabia. Through examining questions. A score of "1" was assigned for a correct answer and "0" for an incorrect answer. A health care worker who obtained a total score of "5" was considered "very aware;" "4 or 3" "somewhat aware;" and "1 or 0" "not aware." The data were coded and analyzed by SPSS® for Windows® ver. 12.0. Strict confidentiality was maintained. All the data were stored in computers at a secured location, with access provided only to the researchers involved in the study. The χ^2 test was used to test association between categorical variables. A p value <0.05 (two-tailed) was considered statistically significant differences.

3. Results

Level of Awareness' Towards Policies of Safety Measures among Endodontic staff at the selected clinics

Items of Policies of Safety Measures	High Level of Awareness		Intermittent Level of Awareness		Low Level of Awareness	
	No	%	No	%	No	%
Universal precautions are applied to patients with HIV and viral hepatitis only"	145	72.5%	6	3%	55	27.5%
"Isolation is necessary for patients with blood-borne infections"	150	75%	11	5.5%	40	20%
Used needles can be recapped after giving an injection"	139	69.5%	14	7%	35	17.5%
For decontamination of devices (with only contact with skin) washing with usual detergent is enough"	143	71.5%	9	4.5%	30	15%
Universal precautions are not necessary in situations that might lead to contact with saliva"	149	74.5%	17	8.5%	46	23%
"HCWs with non intact skin should not be involved in direct patient care until the condition resolves "	156	78%	15	7.5%	40	20%
Blood spills should be cleaned up promptly with sodium hypochlorite"	139	69.5%	14	7%	35	17.5%

This study finding showed that awareness towards Policies of Safety Measures among some Endodontic staff at dental clinics was variable. The majority (87.0%) of the Endodontic staff had a high level of awareness towards Policies of Safety Measures in relation to for "HCWs with non intact skin should not be involved in direct patient care until the condition resolves ". On the other hand (69.5%) of the Endodontic staff had a lowest level of awareness towards Policies of Safety Measures in relation to Used needles can be recapped after giving an injection" as well as (69.5%) was in the aspect of Blood spills should be cleaned up promptly with sodium hypochlorite" .While, concerning the Intermittent Level of Awareness the highest level was

awareness towards Policies of Safety Measures in relation to ""Isolation is necessary for patients with blood-borne infections" "(8.5%). While, regarding the Low Level was in the item of Universal precautions are not necessary in situations that might lead to contact with saliva. Although , the highest percentage concerning the low level of awareness towards policies of safety measures (27.5%) was in the aspect of Universal precautions are applied to patients with HIV and viral hepatitis only". While the lowest level in such item (15%) was in the aspect of For decontamination of devices (with only contact with skin) washing with usual detergent is enough".

4. Discussion

The level of awareness' towards Policies of Safety Measures among Endodontic staff was showed significantly associated with many variables (Table 1). This study finding showed that awareness towards Policies of Safety Measures among some Endodontic staff at dental clinics was variable. The majority (87.0%) of the Endodontic staff had a high level of awareness towards Policies of Safety Measures in relation to for "HCWs with non intact skin should not be involved in direct patient care until the condition resolves ".On the other hand (69.5%) of the Endodontic staff had a lowest level of awareness towards Policies of Safety Measures in relation to Used needles can be recapped after giving an injection" as well as (69.5%) was in the aspect of Blood spills should be cleaned up promptly with sodium hypochlorite" .While, concerning the Intermittent Level of Awareness the highest level was awareness towards Policies of Safety Measures in relation to ""Isolation is necessary for patients with blood-borne infections" "(8.5%).While, regarding the Low Level was in the item of Universal precautions are not necessary in situations that might lead to contact with saliva. Although , the highest percentage concerning the low level of awareness towards policies of safety measures (27.5%) was in the aspect of Universal precautions are applied to patients with HIV and viral hepatitis only". While the lowest level in such item (15%) was in the aspect of For decontamination of devices (with only contact with skin) washing with usual detergent is enough".

This research study consistent with the results carried out by *Guo, Shiao, Chuang,(2003)*, involving 550 medical students and residents during the 1989–1990 training year likewise reported a high prevalence of needle stick injuries (71%), and a higher frequency of injury (by a factor of 6) among surgical residents than among medical residents. In these two studies, rates of reporting needle stick injuries ranged from 9 to 19%, and a more recent survey of all types of providers from an Iowa medical organization found that 34% had reported their exposure to an employee health service. On the other hand, the study carried by *Regina (2002)*, showed that only 49% of surgical residents report such injuries extends previous observations that underreporting may result in a substantial underestimation of the magnitude of the problem.

Pertaining to the Intermittent Level of Awareness the highest level was awareness towards Policies of Safety Measures in relation to concerning the Intermittent Level of Awareness the highest level was awareness towards Policies of Safety Measures in relation to ""Isolation is necessary for patients with blood-borne infections" "(8.5%).While, regarding the Low Level of Awareness towards Occupational in the item of Universal precautions are applied to patients with HIV and viral hepatitis only" "was showed higher rate (27.5%)It is very important that health care workers have good understanding about the risk of blood-borne pathogens at work place and about the preventive measures for reducing risk.

In this study, the majorities of the respondents were very knowledgeable of the harmful effects of bloodborne pathogens and identified HIV as a potential harm followed by hepatitis and bacterial infections. In this study, health care workers employed in the health sector for longer periods were more aware of universal precautions compared with those who served for shorter periods. Training and education have been found to be of paramount importance to developing awareness among health care workers, as well as improving adherence to high-quality clinical practice. This research findings is congruent with the findings of the study carried out by (*Rapiti, et al., 2005*), who found that he greater awareness of universal precautions among health care workers employed for a longer period non-compliance among medical doctors and nurses are associated with insufficient knowledge, workload, forgetfulness, workplace safety and the insight that colleagues also failed to track.

Personnel protective equipments reduce the risk of exposure of the health care provider's skin or mucous membranes to potentially infectious materials. Protective barriers reduce the risk of exposure to blood and other body fluids to which universal precautions apply. Examples of protective barriers include gloves, gowns, masks, and protective eyewear. Just over one half of the respondents indicated that they were provided with protective equipment most times. Furthermore, more nurses were provided with protective equipment than medical technologists and medical doctors. Interestingly, more respondents who were aware of universal precautions reported being provided with protective equipment more often than those who were somewhat or not aware. This study results congruent with the research data carried out by *Pournaras, et al,2004*, who reported that less than two-thirds of health care workers claimed that they always used personal protective equipment such as aprons, gowns and gloves, during surgeries and while conducting deliveries. According to *Jawaid, et al*, among medical doctors working in a tertiary care hospital in Pakistan, compliance for hand washing was 86%, for wearing gloves was 79%, masks 46%, eye goggles 25% and for using gowns/plastic aprons was 45%.³⁵ However, there is sometimes a high rate of non-compliance among health care workers and this may be due to a lack of understanding among health care workers of how to properly use protective barriers.

The current study findings showed that there was high level of awareness' towards Policies of Safety Measures among Endodontic staff within the study setting. These findings suggest that training of dental staff to maintain and enhance their knowledge about occupational safety, blood borne pathogens and universal precautions could improve their use of universal precautions. Regular training should include the universal precautions, initial biohazard handling, safety policies, safety behavior, safety equipments, continuing monitoring and maintain continuous quality improvement concerning the practice of occupational safety.

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References

- [1] Sorra, V, F.(2013).*Safety culture Evaluatement: a tool for improving policies of safety measures in healthcare organizations*. Westat, Research Blvd, Rockville, MD 20850, USA
- [2] CDC: Universal Precautions for Prevention of Transmission of HIV and Other Bloodborne Infections. accessed 22 December 2008, [http://www.cdc.gov/]
- [3] Rapiti Elisabetta, Prüss-Ustün, Hutin Yuvan: Evaluateing the burden of disease from sharps injuries to healthcare workers at national and local levels. 2005, Geneva: World Health Organization, Environmental Burden of Disease Series, No 11
- [4] Odd Cathrine, Abed Abdullah, Strathdee Steffanie, Scott Paul, Botros Boulos, Safi Naquibullah, et al: HIV, hepatitis C, and hepatitis B infections and associated risk behavior in injection drug users, Kabul, Afghanistan. *Emerging Infectious Diseases Journal*. 2007, 13: 1327-31.
- [5] Kuo Irene, ul-Hasan Salman, Galai Noya, Thomas David, Zafar Tariq, Ahmed Mohaamad, Strathdee Steffanie: High HCV seroprevalance and HIV drug use risk behaviours among injection drug users in Pakistan. *Harm Reduction Journal*. 2006, 3: 26-10.1186/1477-7517-3-26.
- [6] Saif-u-Rehman, Rasoul Mohammad, Wodak Alex, Claeson Mariam, Friedman Jed, Sayed Ghulam: Responding to HIV in Afghanistan. *Lancet*. 2007, 370: 2167-9. 10.1016/S0140-6736(07)61911-4.
- [7] Guo YL, Shiao J, Chuang Y-C: Needlestick and sharps injuries among health-care workers in Taiwan. *Epidemiology and Infection Journal*. 2003, 122: 259-65. 10.1017/S0950268899002186.
- [8] Regina Chan, Molassiotis Alexander, Eunica Chan, Virene Chan, Becky Ho, Chit-Ying Lai, et al: Nurses' knowledge of and compliance with universal precautions in an acute care hospital. *International Journal of Nursing Studies*. 2002, 39: 57-63.
- [9] Pournaras S, Tsakris A, Mandraveli K, Faitatzidou A, Douboyas J, Tourkantonis A: Reported needlestick and sharps injuries among healthcare workers in a Greek general hospital. *Occupational Medicine*. 2004, 7: 423-6. 10.1093/occmed/49.7.423.
- [10] Lacerda RA. Infeccao hospitalar e sua relacao com a evolucao das praticas de assistencia a saude. In: Lacerda RA, ed. *Controle de infeccao em centro cirurgico*. Sao Paulo: Atheneu, 2003: 9-23.
- [11] Lacerda RA, Egry EY. As infeccoes hospitalares e a sua relacao com o desenvolvimento da assistencia hospitalar: reflexoes para analise praticas atuais de controle. *Rev Latinoam Enfermagem* 1997;5:13-23.
- [12] Beltrami EM, Williams IT, Shapiro CN, Chamberland ME. Risk and management of blood-borne infections in health care workers. *Clin Microbiol Rev* 2000;13(3):385-407.
- [13] Gerberding JL. Incidence and prevalence of human immunodeficiency virus, hepatitis B virus, hepatitis C virus, and cytomegalovirus among health care personnel at risk for blood exposure: final report from a longitudinal study. *J Infect Dis* 1994;170(6):1410-7.
- [14] Ruben FL, Norden CW, Rockwell K, Hruska E. Epidemiology of accidental needle-puncture wounds in hospital workers. *Am J Med Sci* 1983;286(1):26-30.
- [15] Pruss-Ustun A, Rapiti E, Hutin Y. Estimation of the global burden of disease attributable to contaminated sharps injuries among health-care workers. *Am J Ind Med* 2005;48(6):482-90.
- [16] Khuri-Bulos NA, Toukan A, Mahafzah A, et al. Epidemiology of needlestick and sharp injuries at a university hospital in a developing country: a
- [17] A year prospective study at the Jordan University Hospital, 1993 through 1995. *Am J Infect Control* 1997;25(4):322-9.
- [18] Wang FD, Chen YY, Liu CY. Analysis of sharpedged medical-object injuries at a medical center in Taiwan. *Infect Control Hosp Epidemiol* 2000;21(10):656-8.
- [19] Pruss-Ustun A, Rapiti E, Hutin Y. Sharp injuries: global burden of disease from sharp injuries to health care workers Geneva, Switzerland. World Health Organization, 2003.
- [20] Orji EO, Fasubaa OB, Onwudiegwu U, et al. Occupational health hazards among health care workers in an obstetrics and gynaecology unit of a Nigerian teaching hospital. *J Obstet Gynaecol* 2002;22(1):75-8.
- [21] Recommendations for protection against viral hepatitis. *MMWR Morb Mortal Wkly Rep* 1985;34(22):313-24, 329-35.
- [22] Recommendations for preventing transmission of infection with human T-lymphotropic virus type III/lymphadenopathy-associated virus in the workplace. *MMWR Morb Mortal Wkly Rep* 1985;34(45):681-6, 691-5.
- [23] McCarthy GM. Universal Precautions *J Can Dent Assoc* 2000;66:556-7.
- [24] Update: human immunodeficiency virus infections in health-care workers exposed to blood of infected patients. *MMWR Morb Mortal Wkly Rep* 1987;36(19):285-9.
- [25] Acquired immunodeficiency syndrome (AIDS): precautions for health-care workers and allied professionals. *MMWR Morb Mortal Wkly Rep* 1983;32(34):450-1.
- [26] Garner JS. Hospital Infection Control Practices Advisory Committee. Guideline for isolation precautions in hospitals. *Infect Hosp Epidemiol* 1996;17:53-80.
- [27] Spire B, Barre-Sinoussi F, Montagnier L, Chermann JC. Inactivation of lymphadenopathy associated virus by chemical disinfectants. *Lancet* 1984;2(8408):899-901.
- [28] Martin LS, McDougal JS, Loskoski SL. Disinfection and inactivation of the human T lymphotropic virus type III/Lymphadenopathy-associated virus. *J Infect Dis* 1985;152(2):400-3.

- [29] McDougal JS, Martin LS, Cort SP, Mozen M, Heldebrant CM, Evatt BL. Thermal inactivation of the acquired immunodeficiency syndrome virus, human T lymphotropic virus-III/lymphadenopathy-associated virus, with special reference to antihemophilic factor. *J Clin Invest* 1985;76(2):875-7.
- [30] Olowu O, Oluaje E, Kehinde O. Knowledge and practice of universal precautions among final year medical and dental students in the University College of Ibadan. *Dokita* 2001;28:6-9.
- [31] Odujurin OM, Adegoke OA. AIDS: Awareness and blood handling practices of health care workers in Lagos. *Nig J Epidemiol* 1995;11(4):425-30.
- [32] Palenick C. Strategic planning for infection control. *J Canadian Dental Association* 2000;66:556-7.
- [33] Danchaivijitr S, Tantiwatanapaiboon Y, Chokloikaew S, et al. Universal precautions: knowledge, compliance and attitudes of doctors and nurses in Thailand. *J Med Assoc Thai* 1995;78 Suppl 2:S112S117.
- [34] Twitchell K. Bloodborne pathogens: what you need to know-Part I. *Journal of the American Association of Occupational Health Nurses* 2003;51:46-7.
- [35] Godin G, Naccache H, Morel S, Ebacher MF. Determinants of nurses' adherence to universal precautions for venipunctures. *Am J Infect Control* 2000;28(5):359-64.
- [36] Stein AD, Makarawo TP, Ahmad MFR. A survey of doctors' and nurses' knowledge, attitudes and compliance with infection control guidelines in Birmingham teaching hospitals. *Journal of Infection Control* 2003;54:68-73.
- [37] Trim JC, Adams D, Elliott TS. Healthcare workers' knowledge of inoculation injuries and glove use. *Br J Nurs* 2003;12(4):215-21.
- [38] Rana JS, Khan AR, Haleem AA, et al. Hepatitis C: knowledge, attitudes and practices among orthopedic trainee surgeons in Pakistan. *Ann Saudi Med* 2000;20(5-6):477-9.
- [39] Wang H, Fennie K, He G, et al. A training programme for prevention of occupational exposure to bloodborne pathogens: impact on knowledge, behaviour and incidence of needle stick injuries among student nurses in Changsha, People's Republic of China. *J Adv Nurs* 2003;41(2):187-94.
- [40] Heinrich J. Occupational Safety: Selected cost and benefit implications of needle stick prevention devices for hospitals (letter to House of Representatives from US General Accounting Office), 2000.
- [41] Gerberding JL. Clinical practice. Occupational exposure to HIV in health care settings. *N Engl J Med* 2003;348(9):826-
- [42] Connington A. Has the point been made? a needlestick injury awareness survey. *Safe Gard Medical* 2002.
- [43] Alam M. Knowledge, attitude and practices among health care workers on needle-stick injuries. *Ann Saudi Med* 2002;22(5-6):396-9.
- [44] Sadoh WE, Fawole AO, Sadoh AE, et al. Practice of universal precautions among healthcare workers. *J Natl Med Assoc* 2006;98(5):722-6.
- [45] Jawaidd M, Iqbal M, Shahbaz S. Compliance with standard precautions: a long way ahead. *Journal of Public Health* 2009;38:85-8.
- [46] Evanoff B, Kim L, Mutha S, et al. Compliance with universal precautions among emergency department personnel caring for trauma patients. *Ann Emerg Med* 1999;33(2):160-5.