

Research Article

Attentiveness, and attitude, among junior cadre doctors about Occupational Health hazards and their practice of the appropriate preventive measures in Minia governorate

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Abstract

Background: Health professionals, especially house officer physicians and residents, are exposed to many occupational health hazards in hospitals which include biological (infectious bacterial and viral agents like hepatitis A, hepatitis C, and HIV), physical (musculoskeletal health problems due to working for a long time also exposure to radiation, laser, or chemicals and anesthetics), and psychological health problems include the economic problems, the aggressive competition between the physicians and the complications of treating high-risk patients. **Aim of study** was to identify house officers and residents' awareness, and attitude, about occupational hazards in Minia university hospital, Minia general hospital and Mallawy general hospital in Minia governorate and to determine whether preventive techniques are employed. **Methods of the study:** a descriptive_ cross-sectional hospital-based study, an interview questionnaire was used to detect their awareness, and attitude about occupational health hazards and the appropriate use of preventive measures from March 2017 to september 2017. **Results:** Most of the respondents were attentive of biological hazards, 70% specifically mentioned viral hepatitis and 16% mentioned the human immunodeficiency virus. The percentage of 40% of the respondents recognized musculoskeletal problems as a physical hazard. The most repeatedly stated were backache_, neck ache, and varicose veins. Regarding the use of preventive measures, the majority of them perceived the great importance of sterilization, disposable personal tools and barrier techniques, including gloves, masks, and eyewear. **Conclusion:** Many occupational health hazards in house officers and residents, due to uncaring practice of them, but adequate awareness among doctors about these hazards, and their adherence to the preventive measures has decreased these hazards.

Keywords: Awareness, Occupational Health hazards, preventive measures, physicians, Minia.

Introduction

Importance of the problem: Many house officer physicians and residents are daily exposed to Accidents and diseases in their workplace. There is a shortage of knowledge and skills to prevent Occupational health problems and diseases. Many doctors stated that exposure to many factors in the workplace can affect their health. Most of them recognized the risk of infection, difficult work postures, work movements and handling of various materials as the main factors affecting their physical health. Less often mentioned were risks of an accident, exposure to noise or vibration, chemicals, radiation, fumes, or gases. The exposure to factors that may affect mental wellbeing also was reported (Eurostat, 2009). It is very important for physicians to prevent Occupa-

tional hazards in the workplace. Occupational health and hospital waste management should be considered an integral part of public health services (Kearns et al., 2008).

Infectious diseases are considered by the practitioners and most of the public as being extremely hazardous especially those who are working in tropical medicine and fevers (Leigh, 2007) and (Galginatis & Gift, 2008). Regarding hospital working house officer physicians the hazards can be classified as Infectious, Physical, Psychological, Allergic, anesthetic gases exposure and radiation exposure Infectious diseases hazards due to needles and sharp objects and can be sources of viral infections such as viral hepatitis and acquired immunodeficiency syndrome (AIDS) (Delcos et

al., 2007). Also, bacterial infections are a possible risk like syphilis and tuberculosis (Samaranayake, 2002). Many studies have indicated that physicians have a greater risk than the general population of contracting hepatitis virus infection (Mosley et al., 1975). Many physicians reported percutaneous injuries, mostly sustained from needles. Physical hazards include chemical dependency (Cezar-Vaz et al., 2009) and musculoskeletal problems that related to postural of practice, varicose veins, etc. (Al Wazzan et al., 2009). Psychological stress conditions also considered an occupational health problem (Alexander, 2008) and (de Souza & Freitas, 2010).

Allergic reactions like skin allergy to latex gloves, solvents, lubricating oils, detergents, and X-ray processing chemicals (Rubel & Watchorn, 2002). many physicians wore gloves selectively for patients or procedures perceived as being at 'high risk' for transmission of infectious diseases like human immunodeficiency virus (HIV) or hepatitis (Kavli & Forde, 2008). The occurrence of hand dermatitis among health care and medical personnel has been found to be higher than in the general population (Smit et al., 2009).

Allergy to latex, e.g. in rubber gloves, is an increasing problem in health care providers including doctors (McCracken, 1999). This is due to increased awareness of blood infections (e.g. HIV and hepatitis) (Crippa & Pasolini, 1997) and (Ohlson et al., 2001). The risk of progression from skin rash and urticaria to more serious reactions, such as asthma or anaphylaxis, is unknown. The prolonged periods of contact with latex that are required for most medical and surgical procedures could exacerbate the allergic reaction. Recently the occurrence of occupational diseases among doctors is greatly increased (Kanerva et al., 2000). Moreover, skin diseases are the second most frequent occupational disease, following musculoskeletal disorders, and most cases of occupational dermatitis involve contact dermatitis (Adams, 1999).

The Repeated exposure to anesthetic gases is hazardous to surgeons (Shuhaiber et al., 2002) and (Henderson & Matthews, 2002). Exposure to Ionizing X-ray radiation was also recorded (Shuhaiber et al., 2002) and (Szymanska, 2009).

Non-ionizing radiation exposure is recent, in addition to ophthalmologists exposure to lasers which have a potential hazard to the eye and other tissues (Szymanska, 2009).

of these occupational hazards should be done through infection control measures and proper handling of potentially infected materials by using barrier techniques include gloves, masks, protective eyewear, high power suction, and good ventilation to reduce aerosols and vapor dangers (Kumar et al., 2002) and (Tullar et al., 2010). Non-latex gloves are proposed to deal with latex allergy. Lead aprons and radiation level sensors prevent radiation hazards (Adams, 1999) and (Shuhaiber et al., 2002).

Rationale and justification of the study: In the developing countries, including Egypt, there is an imperfect obtaining accurate estimate of the frequency of occupational health hazards due to both deficient systems of data collecting and reporting also due to unrecognizing of some occupational medical problems as work-related (Waehrer et al., 2005). Good occupational health services are considered to be of great economic importance to both the employers and the nation. The healthier the workforce and the less time lost in sickness absence, the better productivity (Eurostat, 2009).

Aim of the work

The aim of this study was to identify house officers and residents' awareness, attitude, and practice of occupational hazards and preventive measures in 3 hospitals Minia university hospital, Minia general hospital and Mallawy general hospital, in Minia governorate and to determine whether preventive techniques are employed.

Subjects and methods

Place, time and duration of study: Minia university hospital, Minia general hospital and Mallawy general hospital, Minia governorate from March 2017 to september 2017.

Study population: 150 (junior cadre doctors including house officers and residents in different hospital departments). working at 3 hospitals Minia university hospital, Minia general hospital and Mallawy general hospital in Minia governorate.

Study design: a descriptive cross-sectional hospital-based study.

Study Sample: 150 house officers and residents in different hospital departments from the 3 hospitals who respond to the study

Tools of data collection: after giving sufficient information about the study a verbal consent was taken from the respondents. Data were collected by interview questionnaire. They were asked to respond according to their opinion and understanding of the occupational hazards they faced in their practice according to their perception of importance. Participants were asked about the preventive methods they used. The data were then analyzed and the results classified into 3 main groups: stress, biological hazards, and physical hazards.

Consent: Each participant was required to give verbal consent after explaining the nature, purpose, and uses of the study.

Ethical approval: This study was approved by the Research Ethics Committee of Minia University. All procedures performed in accordance with the ethical standards of the Institutional Research Ethics Committee.

Data management and Statistical analysis: Data were analyzed using SPSS, version 22. Quantitative data were presented by Mean and Standard deviation, while qualitative data were presented by frequency distribution. Chi-square test and P-value ≤ 0.05 was considered statistically significant and ≤ 0.01 was considered highly significant.

Results

There were 150 house officers and residents participants, out of them 38% were females, and 62% were males. The Average age of the participants was 24.06 (± 3.02) Differences were found significantly high between male and female subjects regarding neck shoulder pain, hand wrist pain, backache, and anxiety ($P < 0.05$).

More than 30% of the participants had attended workshops or conferences about occupational

hazards. 12% of participants reported latex allergy and 74% of the participants vaccinated against Hepatitis B. Most of the doctors (94%) identified infection, including viral hepatitis and human immunodeficiency virus (HIV), as a major hazard. 40% of the respondents identified musculoskeletal problems as a physical hazard. The most frequently mentioned were backache, neck ache, and varicose veins.

Stress was identified as a major hazard by 86% of the respondents. The main sources included dealing with patients who had other conditions, especially heart disease; dealing with pregnant women; and doctor-doctor relationships. Taxes, lack of patient knowledge. Stress related to economic factors were mentioned, the increasing number of graduate doctors that enter the profession each year and the taxes (Table 1).

Regarding Preventive measures, all of the respondent physicians talk about sterilization, disposable personal tools and barrier techniques, including gloves, masks, and eyewear, as being of great importance. 54% of doctors in this study considered taking a detailed clinical history of the patient as a step towards preventing occupational hazards. Having a high moral and ethical attitude towards the patients and their colleagues was also considered very important by 67% of the respondents. Sports activities were mentioned by 27% of doctors as a way of dealing with musculoskeletal pain resulting from the work for a long time either in outpatient clinics or in operative theatre (Table 2).

Regarding Level of knowledge about Occupational Health hazards and the appropriate use of preventive measures the Physicians with good knowledge (selected 11-15 correct options) were 96% while those with Fair knowledge (selected 6-10 correct options) were 4% as shown in Table 3.

The Attitude about Occupational Health hazards and the appropriate use of preventive measures by the participants was Good attitude (selected

6-10 correct options) in 97% and poor attitude (selected 1-5 correct options) in 3% as shown in Table 4.

Level of the practice of preventive measures by the participant physicians was good in 14% of them, Fair in 65%, and Poor in 21% of them as shown in Table 5.

About the Frequency of practice of preventive measures by house officers and residents

working at the 3 hospitals 8% of them stated that they always do it while 68% of them stated that they sometimes do it as shown in Table 6.

Table 1: Occupational hazards reported by house officers and residents working in Minia university_ hospital, Minia general hospital and Mallawy general hospital in Minia governorate from March 2017 to September 2017.

Occupational hazards		House officer physicians		Total	
		Number (N)	Percentage (%)	No.	%
Biological hazards	Viral Hepatitis	105	70%	188	94%
	HIV	24	16%		
	Nonspecific	81	54%		
Psychological stress	Patient related	113	75.3%	172	86%
	Doctor related	48	32%		
	Economic	93	62%		
Physical hazards	Musculoskeletal	60	40%	108	54%
	Eye/ear injury	29	19.3%		
	Radiation hazard	12	8%		
	Allergic reactions	12	8%		

Table 2: Preventive measures against occupational hazards reported by house officers and residents working in Minia university hospital, Minia general hospital and Mallawy general hospital in Minia governorate from March 2017 to September 2017.

Preventive measure	House officer physicians	
	Number(N)	Percentage(%)
Repeated Hand wash and sterilization	135	90%
Disposable personal tools & Barrier techniques	147	98%
Viral Hepatitis B vaccine	68	45.3%
Ethical practice towards colleagues and patients	101	67.3%
Full medical history of patients	81	54%
Regular sport activities	41	27.3%
Social activities and meetings	53	35.3%
Cautious use of needles and sharp tools	112	74.7%

Table 3: knowledge about Occupational Health hazards and the appropriate use of preventive measures by house officers and residents working in Minia university hospital, Minia general hospital and Mallawy general hospital in Minia governorate from March 2017 to September 2017.

Level of knowledge	House officer physicians	
	Number(N)	percentage(%)
Good knowledge (selected 11-15 correct options)	144	96 %
Fair knowledge (selected 6-10 correct options)	6	4%
poor knowledge (selected 1-5 correct options)	0.0	0.0%

Table 4: Attitude about Occupational Health hazards and the appropriate use of preventive measures by house officers and residents working in Minia university hospital, Minia general hospital and Mallawy general hospital in Minia governorate from March 2017 to September 2017.

Attitude	House officer physicians	
	Number (N)	Percentage (%)
Good attitude(selected 6-10 correct options)	145	96.7%
poor attitude (selected 1-5 correct options)	5	3.3%

Table 5: Level of the practice of preventive measures by house officers and residents working in Minia university hospital, Minia general hospital and Mallawy general hospital in Minia governorate from March 2017 to September 2017.

Level of the practice	House officer physicians	
	Number (N)	Percentage (%)
Good practice (applied 11-15 practices)	21	14%
Fair practice (applied 6-10 practices)	97	64.7%
Poor practice (applied 1-5practices)	32	21.3%

Table 6: Frequency of practice of preventive measures by house officers and residents working in Minia_ university hospital, Minia general hospital and Mallawy general hospital in Minia governorate from March 2017 to September 2017.

Frequency of practice	House officer physicians	
	Number (N)	Percentage (%)
Always	12	8%
Sometimes	102	68%
Rarely	35	23.3%
Never	1	0.77%

Discussion

The house officers and residents were well aware of the biological hazards, especially the most dangerous ones (HIV and viral hepatitis B&C viruses). This can be due to the great impact of publicity given to blood-borne pathogens infections in the past few years. Respondents mentioned HIV less than hepatitis B virus, probably because of the widely held belief by the public that HIV usually affects people with deviant practices that are strange to the traditionalist nature of the society of Upper Egypt. Some studies_ have revealed that the incidence of hepatitis B emerging after needle-stick injuries from, HBsAg positive, patients is about 20% compared with a percentage of 0.4% following similar exposure to HIV (Beltrami, 2000), (Vincenzo et al., 2002) and (Kumar et

al., 2002). Infections from other micro-organisms such as Epstein Barr virus, because they are rare or the physicians have deficient knowledge about it or do not consider it significant.

A percentage of 86% of the respondent physicians identified stress as the major occupational hazard, which goes along with the international data indicating that doctors consider their profession as highly stressful (Alexander, 2008) and (de Souza & Freitas, 2010), Patient-related stress, according to the respondents' opinions, was associated with dealing with patients who had a medical history of other conditions and they did not mention that. Doctor to doctor relationships Stress, according to the respondents' perceptions, due

to unethical competition among physicians. The increasing number of graduates that enter the line of work each year leads to aggressive competition and economic instability among doctors. Musculoskeletal complaints were common as a result of wrong postural practices (Rundcrantz et al., 1991).

Allergic reactions were not perceived as an important hazard. Only 8 doctors mentioned ionizing radiation as a hazard. Chemical dependency was not mentioned as a potential hazard; this was most probably due to limited use of these products by the doctors and the traditional nature of Upper Egypt society, where alcohol and drug addiction are not acceptable behaviors. So even if there were cases, they would not be mentioned. Concerning preventive measures, all of the physicians mentioned barrier techniques: wearing protective clothing was standard procedure for all the respondents. This is in agreement with the results of a study conducted in Saudi Arabia in which only 2% – 4% of physicians never wore gloves when examining or managing patients (Al-Rabeah and Mohamed, 2002). The condition is the same in a study done in Ontario, Canada 1994 it was found that 91.8% of doctors in always wore gloves, 74.8% always wore masks and 83.6% always wore eye protection (McCarthy and MacDonald, 1997).

A study conducted by Morris et al. showed that about 90% of doctors in Kuwait wore gloves, 75% wore masks and 52% wore eyeglasses (Morris, 1996). In a New Zealand study, 42.0% of physicians wore gloves, 64.8% wore masks and 66.4% wore eye protection (Treasure and Treasure, 1994). Following ethical codes of conduct in practice was mentioned to be of great importance to decrease stress from a doctor–doctor relationships. Taking the full medical history of the patient was necessary to take special precautions for special cases, especially for pregnant women. This was thought to decrease stress from dealing with “high risk” patients.

Although the majority of respondents having good knowledge and attitude toward occupational health hazards’ prevention in this study, the majority of them had a low level of practice of the required principles. Also, Karibasappa et al., in their study reported that, despite having good knowledge and attitude toward

applying preventive measures, the level of practice was poor. In our study, this is explainable in that the majority of respondents were junior cadre doctors who are not having enough years of experience, they are also given greater part of the work, to perform within a limited timeframe so, they usually do not pay good attention to preventive measures application in their clinical practice.

Conclusions

This present study founded that there are many occupational health hazards in recently graduated physicians (junior cadre doctors including house officers and residents in different hospital departements). The uncaring practice of them can have bad health effects on both physicians and patients. But adequate awareness among the recently graduated doctors about these hazards, and their adherence to the preventive measures has decreased these hazards.

Recommendations

- Regular physician health education programs on occupational health problems lead to improve their awareness. This could be done through lectures, conferences, meetings and local media.
- Additional studies are essential to identify appropriate interventions that may reduce the prevalence of physician's occupational health problems. Further continuing education and investigations of proper applicable interventions to decrease occupational health problems are also needed.
- We recommend encouraging events that could improve relations between doctors, e.g. social activities; group sports activities, meetings, dinners, etc. Good social relationships could markedly reduce stress from the poor doctor–doctor relationships.

Conflict of interests: The authors declared that there are no competing interests.

Funding and financial support: There was no source of funding from anyone.

Acknowledgment:

The authors would like to thank all participants especially the house officers and residents in different hospital departements. working at Minia university hospital, Minia

general hospital and Malloway general hospital. Also we would like to express appreciation to everyone who assisted us in conduction of the research.

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