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Occupational Hazards as Perceived by Nursing Interns and Protective Measures

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Abstract:
Background: *Healthcare providers are frequently exposed to many forms of occupational hazards while doing their jobs. Little research was done in Egypt about nursing interns' occupational hazards. Which constitute huge burden on the affected healthcare providers and hospitals as employment agencies.*
Aim: *The present study aimed to assess the perceived occupational hazards and its protective measures among nursing interns'.*
Setting: *The study was carried out at intensive care units at Cairo University Hospital, Egypt.* ***Design:*** *Descriptive design was used in the present study.*
Sample: *Convenient sample of nurses ' intern who enrolled in practice internship year, the total number of the sample (108).*
Tools: *three questionnaires were utilized to collect data of the present study. 1- Occupational hazards assessment questionnaires, 2-. Contributing factors questionnaire, 3- Protective equipment assessment questionnaire.*
Results*: most of nursing interns exposed to physical hazards (65.35 %) followed by chemical hazards (56.40%). While biological hazards ranked as the lowest occurrences (45.73%). The majority of nursing interns (88.0%) perceived that there was lack of educational programs, lack of regular medical examination (80.6%); policies and procedures for occupational safety (79.6%) and ineffective supervision (79.6%) were the most contributing factors for occupational hazards.*
Conclusion: *most of nursing interns highly perceived physical hazards followed by chemical hazards.*
Recommendations: *it is recommended to develop and disseminate policies and guidelines of safety practices in units' hospital wide, regular assessment and update of teaching and training of about occupational hazards and provide programs based on evidence based practice.*
Keywords: *Nursing Interns, Occupational Hazards, Protective Measures*

I. Introduction

Healthcare organizations are characterized by multidimensional and complex environments that make nurses prone to occupational hazards and injuries. Beside the nature of nurses working environment, duties and responsibilities, nurses are facing numerous occupational hazards such as chemical, biological, environmental, physical and psychological risks(Isara and Ofili , 2012, Anandh et al. 2015). Occupational hazards can cause various forms of disabilities; loss of man-power that can lead to decreased productivity and in serious cases may lead to inevitable death of workers, which consequently lead to loss of skilled personnel. Also, occupational vulnerability of health care providers may threaten the quality of health care delivery in developing countries, especially among physicians, nurses and nurses aids (Bazeyo et al., 2015 and Abidoye et al. , 2016).

The multiplying effects of occupational injuries and diseases among providers of health care include economic loss, physical loss and psychological disorders such as depression and stress. Consequently, these have negative effect on the employees, their families and the nation at large. (Adelosoye, Adejumo, Akinbodewa, and Osungbemiro, 2016). Occupational health and safety is an important issue because of increased incidence of morbidity and mortality of exposed employees. An estimated 100,000 people die from occupational hazards, while about 400,000 new cases of occupational diseases are diagnosed every year.(Bell et al., 2013).

Davis , Lackovic and Singleton (2011) and Dropkin et al, (2013) reported that occupational hazards among hospital workers, injuries, were work-related stress and low back pain from lifting , pushing or pulling and transferring patients to beds, chairs, toilet. Also, the high incidence and burden of occupational hazards in hospitals include blood –borne disease such as hepatitis B and human immunodeficiency by being exposed to infectious sharp objects such as needle stick injuries , scalpels, broken glass ,during taking blood samples, and connecting or withdrawing of needles from patients (Mbaisi , Ng'ang'a, omob and Wanzala , 2010, Abdo, Al-Mousa ,Omar, and Salama, 2014, Ahmed, Bekele, Gebremariam and Kaso, 2015)

World Health Organization (2009) defined hazards as a serious phenomenon, substance, personnel activity or condition that may cause loss of life, injury or other health impact, property damage, loss of services,

financial and psychosocial disruption, or environmental damage. In other words, Kalokairinou et al. (2011) defined hazards as an inherent characteristics of a substance, agent, origin of energy or situation that has the possibility of causing undesirable outcomes while risk is the probability that cause damage to 'life, health, and or the environment' may occur from a hazard.

Occupational hazards refer to work environment activities, material, substance, process or condition that have the potential to increase the risk of injury or ill health. While, occupational hazard can be defined as a risk to a person arising from one's employment (Rajan, 2014). Occupational health hazards mean the expected risks to health and safety for those who work outside the home (Maier 2009 in Javed Sadaf and Tehmina Yaqoob. (2011). Occupational hazards were classified as biological and nonbiological. Biological hazards include wounds, cuts, sharp related injuries, direct contact with infected specimens/ biohazardous materials, blood borne disease, infectious diseases/infections, airborne diseases and pollution from soiled materials. While, nonbiological hazards were include physical/ ergonomic, chemical, and psychosocial hazards. (Bazeyo et al., 2015).

Ergonomic injuries results from patient lifting and handling, lifting heavy equipment, and static postures. While, chemical hazards may result from patient treatment and maintenance of a proper environment in healthcare settings, which may cause asthma or trigger asthma attacks. Nurses chemical exposure can result from sterilants, cleaning compounds, hazardous drugs, disinfectants, mercury, anesthetic gases, latex etc. Chemical hazards considered unsafe and the most serious, as it's more not easy to detect their short and long-term effect on the affected nurse (Dropkin et al. , 2013).

Psychological hazards, is defined as passive self-perception, negative view on life in general, and shifts in mood such as; irritation with anything, loss of self-confidence, feeling of emptiness, loss of self- control, feeling of bitterness, feeling of defeat, crying for no visible reason, willingness to give everything up, long-standing feeling of despair, passive image of self and difficulties to concentrate (Burdorf and Ijzelenberg , 2014 and Eljedi, 2015). Furthermore, social hazards, is defined as a difficulties in family relationships and feeling of isolation, insensitivity towards others, affective relation difficulties, social life difficulties, barriers in making friends, social isolation, difficulty in decision making about personal life, and uncontrolled aggressiveness.(Branco , Couto , Hamann and Shimizu, 2010)

Chraiti et al., (2005) and Cardoso, Mascarenhas and Oliveira (2010) mentioned that factors that contribute to hazards and risks may include lack of time and knowledge, forgetfulness, lack of means, negative influence of the equipment on nursing skills, uncomfortable equipment, lack of training, conflict between the need to provide care and self-protection and distance to vital / essential supply, equipment or facility. Additionally , Aliyu and Auwal, (2015) reported that hazards might results from poor supervision, insufficient experience on the job. In Egypt, at a university hospital a study carried by Abou El-enein and El Mahdy (2011) emphasized that the factors and barriers that influenced safety practice measures and that interfere with the safe practice of care include: absence of role model from colleagues or superiors, and the high work load or lack and inaccessibility of sinks.

Use of personal protective equipment is the most important measures to safeguard nurses that constantly in contact with patients that make them liable to from exposure to occupational hazards, particularly in developing countries where occupational safety control rules and principles remain a challenge to implement. Use of personal protective equipment is ordered by the Occupational Safety and Health Administration for healthcare workers to prevent infection with blood borne disease such as human immunodeficiency (AIi , Akhtar, Malik , Mean and Pasha 2010 , Akintayo ,2013 and Leiss, 2014 , Assefa , Kelaye and Tadesse,2016).

Significance

Caregiver workforce is considered one of the largest work forces in the worldwide, it composes over 12% of the working individuals over all the world (Goniewicz et al. , 2012). Healthcare providers are frequently exposed to many forms of infectious agents while doing their duties which may be preventable if health care workers comply with appropriate precautions (Fletcher et al., 2015).). Moreover, Bazeyo et al. (2015) stated that healthcare workers work in an environment that is deeming to be one of the common hazardous occupational settings.

World Health Organization (2006) mentioned that medical sharp injuries have been recognized as one of the occupational hazards among healthcare workers. Medical sharps injuries cause about 2 million HBV, 900, 000 HCV and 170, 000 HIV infections among health-care workers each year globally. In Saudi Arabia, Abdullah et al. (2013) concluded that nurses' group was the most affected occupational category during the research period. Also, they are more vulnerable to sharp injuries and air borne infections. In Egypt, study carried out by Gaber, (2009) in Gaber , (2013) added that health care workers at Zagazig University Hospitals are exposed to all the risks originated from occupational risks in percentages ranging from 77.8% (for chemical risks) to 97.9 % (for environmental/ergonomic risks). Additionally, Hossein (2015) concluded that nurses showed high incidence of needle stick injuries because they don't follow standard precaution during children

vaccination. However, study carried at cardiac catheterization units at Cairo University Hospitals by Hassan (2014) revealed that health team awareness was high regarding ergonomics hazards followed by biological hazards. While, the least perceived was radiological hazards followed by physical hazards.
Moreover, from investigators observation, while working with the nursing interns at their clinical practice areas. It was observed that most of absenteeism days / sick leave due to their exposure to occupational hazards such as (ergonomic and physical hazards). Little research was done to assess nursing intern occupational hazards. Therefore, the present study aims to assess the perceived occupational hazards and their protective measures among nursing interns during their clinical practices.

II. Subjects and methods

Aim of the study:
To assess the perceived occupational hazards and their protective measures among nursing intern.
Research Questions:
- What are the occupational hazards as perceived by nurse intern?
- What are the factors contribute to occupational hazards?
- What are the protective measures of occupational hazards as perceived by nurse intern?

Research Design:
Descriptive design was utilized in this study.
Setting:
The study was carried out at the intensive care units at Cairo University Hospital, where nurse interns are working. They include: pediatric intensive care unit (ICU), emergency ICU, obstetric ICU, area of choice (emergency pediatric ICU) , area of administration, and medical ICU Unit one and two.

Sample:
A convenient sample of (108) nursing interns who are willing to participate in the study were constitute a study sample. Data were collected during their clinical training experience. Inclusion criteria: nurse interns who had finished at least two clinical rotations. i.e. had at least 3 months experience in clinical areas.
Tools of data collection:
Data of the current study were collected through utilizing the following tool:
1- Occupational hazards assessment questionnaires developed by the investigators guided by literature International Labour Organization (1999), Osborne (2002), Gao (2011), Wube, (2011). It consists of two parts; first part consisted of demographic data sheet composed of four questions which include (age, gender, training clinical area, safety education and employment condition). The second part is the occupational hazards dimensions which include six domains, the first domain of accidental hazards (five items); physical hazards (twenty items); chemical hazards (three items); biological hazards (6 items), psychological hazards (seven items) and social hazards (seven items).
2- Contributing factors questionnaire modified from Hassan (2014) it contains (ten items).
3- Protective measures assessment questionnaire developed by researchers guided by literature He, ,Luo, Luo, and, Zhou (2010) and Eljed (2015). It composed of (twenty two items).

Scoring system:
Five –points Likert scale, were used to assess occupational hazards, it ranged from (1) never, (2) rarely, (3) sometimes, (4) usually, and (5) always.
Contributing factors questionnaire was assessed through using three-points Likert scale that ranged from (1) which indicate disagree , (2) unsure, and (3) that indicate agree.
Protective measures assessment questionnaire was assessed by using three points Likert scale as follows: disagree (1), uncertain (2), and (3) agree.

Validity and reliability:
Data collection tools were tested for their content validity by five experts in nursing administration to assess the coverage, and clarity of items. Modification made based on their recommendation.
Reliability of the tools was checked by Cronbach's alpha test. Test of reliability for the occupational hazards questionnaire cronbach's coefficient alpha showed 0.97 during pilot study. Also, reliability test for Contributing factors questionnaire e 0.85. Protective equipment assessment questionnaire reliability test was 0.95. This indicated that the three questionnaires are highly reliable. Pilot sample was not included to the total sample.
Pilot study:
A pilot study was applied on a sample of 10 % of nursing interns', to test the clarity and applicability of the questionnaire and time needed to fill it. Based on the finding of pilot study minor changes were made and the average time consumed to fill the questioners ranged from 20-25minutes.

Ethical consideration and Procedure:
An official permission was obtained from the dean of the faculty of nursing - Cairo University. Also, a written permission was obtained from the head of nursing administration. Permission was also taken from the medical and nursing directors of ICUs, and verbal informed consent obtained from the respondents before the questionnaires were administered. Confidentiality and anonymity were ensured, whereby respondents were not allowed to reveal names on the questionnaires.

Procedure:
Full disclosure of the nature of the study and its objectives was given to all respondents prior to their participation in the present study by the researcher. Furthermore, they were assured that they could withdraw from the present study at any time. Questionnaires were distributed to the study sample at their clinical areas, during morning and afternoon shifts, with complete explanation of how to answer the questionnaires. Data was collected during April –May 2016 with duration of two months.

Statistical design:
The obtained data were reviewed and prepared for computer processing, coded, analyzed and tabulated, using statistical package of the social sciences " SPSS" software version 21. Data was presented using descriptive statistics in the form of frequencies and percentages, means, standard deviations. The F value of analysis (ANOVA) was calculated for comparison between more than two means. A statistical significance was considered at P- value <0.05.

III. Results

Table (1) frequency distribution of demographic characteristic of nursing intern (N = 108)

Demographic variables		No	%
Age	<20 years	2.0	1.9
	20 - <23 years	89.0	82.4
	23- <27 years	15.0	13.9
	27 +> years	2.0	1.9
Mean age ±SD	(2.2 ± 0.5)		
Gender	Male	38	35.2
	Female	70	64.8
Training area	Critical Care	21	19.4
	Emergency	11	10.2
	Pediatric	29	26.9
	Obstetric	26	24.1
	Area of choice (emergency pediatric ICU)	12	11.1
	Administration	9	8.3
Employment condition	Work	65	60.2
	Not work	43	39.8

Table (1) showed that the highest percentage of nursing interns (89.0 %) their age ranged between 20 - < 23 years. Most of them were female (64.8%). furthermore, around two thirds of the sample working at other hospitals during internship year.

Figure (1) Nursing interns' frequency distribution regarding their safety education (N = 108)

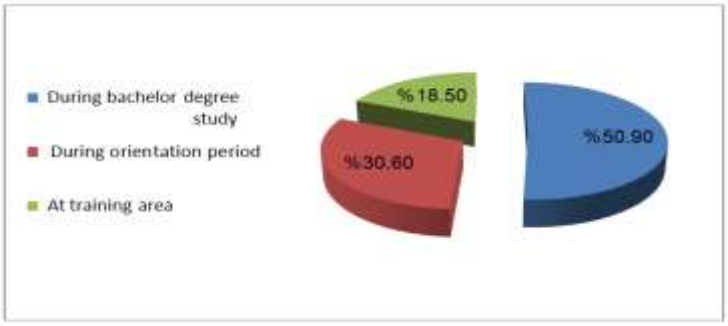

Figure (1) revealed that around half of nursing interns' (50.90%) received safety education during their bachelor degree study. While the lowest percentage (18.50 %) of them get safety education at training area

Table (2) Nursing interns' perception of accidental hazards (N = 108)

Accident hazards	Mean	± SD
Slips, trips, and falls on wet floors, during emergency situations, after fires, or chemical accidents	2.65	1.36
Stabs and cuts from sharp objects, such as needle-sticks and cuts by blades.	3.13	1.27
Burns and scalds from contact with hot sterilizing equipment or hot water and steam pipes.	1.95	1.100
Electrical shock from faulty or improperly grounded equipment, or equipment with faulty insulation	1.98	1.11
Injuries to legs and toes caused by falling objects, e.g., medical instruments	2.18	1.20

Table (2) clarified that nursing interns highly perceived (3.13+ 1.27) the cuts from sharp objects, especially needle-sticks bad blades, followed by falls on wet floors, especially during emergency situations (2.65 + 1.36).

Table (3) Nursing interns' perception of physical hazards (N = 108)

Physical hazards	Mean	± SD
Sleep disturbances	3.73	1.38
Leg pains	4.27	0.87
Body pains	4.19	1.08
Back ache	4.20	1.07
Arm pains	3.71	1.37
Rheumatism/arthritis	2.81	1.59
Circulatory disturbances	2.66	1.49
Shifts in appetite	3.04	1.43
Digestive disturbances	3.24	1.35
Visual disturbances	2.90	1.49
Auditory disturbances	2.87	1.53
Respiratory disturbances	3.27	1.37
Fainting/dizzy	3.07	1.53
Headache	3.54	1.26
Anxiety/stress	3.54	1.43
Hypertension	2.98	1.58
Sinusitis	2.81	1.52
Nose or throat	3.11	1.47
Skin disease	2.73	1.58
Allergies	2.68	1.50

Table (3) illustrated that the majority of nursing interns reported physical hazards highest mean score (leg pains, back pains and body pains) (4.27± 0.87, 4.20 ± 1.07 and 4.19 ± 1.08) respectively. Moreover, showed that the lowest mean score of physical hazards were (circulatory disturbances and allergies) (2.66 ± 1.49 and 2.68 ± 1.50).

Table (4) Nursing interns' perception of chemical hazards (N = 108)

Chemical hazards	Mean	± SD
Irritation of the eyes, nose, and throat due to exposure to airborne aerosols or contact with droplets of washing and cleaning liquids.	2.67	1.31
Chronic poisoning because of long-term exposure to medications, sterilizing fluids.	2.16	1.10
Latex allergy caused by exposure to natural latex gloves and other medical devices containing latex.	3.64	1.39

Table (4) data the table clarified that most of nursing interns exposed to chemical hazards due to exposure to natural latex gloves and other latex-containing medical devices, followed by Irritation of the eyes, nose, and throat (3.64 ± 1.39 and 2.67 ± 1.31) respectively.

Table (5) Nursing interns' perception of biological hazards (N = 108)

Biological	Mean	± SD
HIV	2.28	1.44
Hepatitis B	2.30	1.42
Hepatitis C	2.41	1.51
Tuberculosis	2.00	1.21
Herpes	2.05	1.38
MRSA	2.73	1.58

Table (5) demonstrated that the majority of nurses exposed to MIRSA (2.73 ± 1.58) , followed by hepatitis C and B (2.41± 1.51 and 2.30 ± 1.42) respectively .

Table (6) Nursing interns' perception of psychological hazards (N = 108)

Psychological hazards	Mean	± SD
Irritation with everything	3.45	1.45
Loss of self-confidence	2.68	1.37
Feeling of emptiness	2.46	1.33
Loss of self-control	2.77	1.40
Bitterness	2.64	1.40
Feeling of defeat	2.52	1.37
Crying for no apparent reason	2.50	1.43
Negative image of oneself	2.61	1.44

Table (6) illustrated that irritation with everything was common among the study sample (3.45 + 1.45) , the second major problem was loss of self-control (2.77 + 1.40) followed by loss of self confidence (2.68 + 1.37).

Table (7) Nursing interns' perception of social hazards (N = 108)

Social hazards	Mean	± SD
Family relation difficulties	2.57	1.51
Insensitivity towards others	2.57	1.51
Social life difficulties	2.74	1.50
Find it difficult to make friends	2.91	1.44
Social isolation	2.78	1.49
Difficulty in making decisions regarding personal life	2.67	1.50
Uncontrolled aggressiveness	2.53	1.42

Table (7) emphasized that the high mean score of nursing interns' social hazard difficulty to make friends (2.91± 1.44), social isolation and difficulties with their social life (2.78 ± 1.49, 2.78 ± 1.49) respectively.

Table (8) total percent mean score of occupational hazards subscales as perceived by nursing intern (N = 108)

Variables	Percent mean score	Rank
Accidental hazard	47.56	5
Physical hazards	65.35	1
Chemical	56.40	2
Biological	45.73	6
Psychological	54.03	3
Social	53.62	4

Table (8) showed that nursing interns had high mean score for perception of physical hazards (65.35) followed by chemical hazards (56.40). Moreover, that data revealed that biological hazards had the lowest mean score (45.73) of interns perception.

Table (9) frequency distribution of nursing interns' perception regarding to contributing factors of occupational hazards (N =108)

Variables	Agree		Unsure		Disagree	
	No	%	No	%	No	%
Lack of equipment and tools for protection	77	71.3	15	13.9	16	14.8
lack of lifting tools and transportation of patients	79	73.1	13	12.0	16	14.8
Improper preparation of healthcare providers	83	76.9	10	9.3	15	13.9
Work overload	81	75.0	17	15.7	10	9.3
Lack of information regarding use of modern tools and equipment	74	68.5	23	21.3	11	10.2
Lack of educational and development al programs for healthcare providers in the unit	95	88.0	9	8.3	4	3.7
Lack of policies and procedures for occupational safety in the unit	86	79.6	15	13.9	7	6.5
Lack of a regular medical examination	87	80.6	16	14.8	5	4.6
Ineffective supervision	83	76.9	22	20.4	3	2.8
Non-availability of medical immunizations / vaccinations	73	67.6	28	25.9	7	6.5

Table (9) demonstrated that most of nurses (88.0%) agree that there was a lack of educational and developmental programs for healthcare providers. Also, most of them (80.6%) agreed that there was a lack of regular medical examination. While, (79.6 %) of them agreed about lack of policies and procedures for occupational safety in the unit and ineffective supervision.

Table (10) percentage distribution of nursing interns' perception regards protective measures (N =108)

Variables	Agree		Unsure		Disagree	
	No	%	No	%	No	%
Wear shoes designed for nurses, with non-slip soles	80	74.1	17	15.7	11	10.2
Handle sharp objects with extreme care	89	82.4	13	12.0	6	5.6
use special safety receptacles to store used needles .	93	86.1	13	12.0	2	1.9
Follow appropriate procedures in handling and disposing of sharp instruments or needles	92	85.2	12	11.1	4	3.7
Install ground fault circuit interrupters	72	66.7	32	29.6	4	3.7
Call a qualified electrician to test and repair faulty or suspect equipment.	82	75.9	20	18.5	6	5.6
Comply with all safety instructions on the installation	79	73.1	25	23.1	4	3.7
Periodic inspection of electrical medical equipment.	79	73.1	22	20.4	7	6.5
Keep all passages clearly visible and uncluttered	70	64.8	25	23.1	13	12.0
Wear a radiation protective dosimeter when exposed to radiation;	72	66.7	24	22.2	12	11.1
Comply with all safety instructions.	74	68.5	26	24.1	8	7.4
Install air conditioning with effective general ventilation in the emergency room.	80	74.1	16	14.8	12	11.1
Use non-latex or powder-free latex gloves.	77	71.3	17	15.7	14	13.0
Follow infection control precautions regarding blood, body fluids and tissue are infectious	82	75.9	17	15.7	9	8.3
Routinely use barriers (such as gloves and gowns)	87	80.6	11	10.2	10	9.3
Wash hands immediately after removing gloves	89	82.4	15	13.9	4	3.7
Wash hands when coming into contact with blood or body fluids	83	76.9	16	14.8	9	8.3
Provide lifting aids for the lifting and transport of heavy patients	82	75.9	82	75.9	13	12.0
consult an occupational safety specialist for the safe handling of heavy patients	72	66.7	22	20.4	14	13.0
counseling services should be available to workers exposed to post-traumatic stress syndrome	74	68.5	20	18.5	14	13.0
Students must remove all personal protective equipment before leaving the work area.	84	77.8	12	11.1	12	11.1

Table (10) revealed that nursing interns were highly perceived special safety receptacles to store used needles until disposal; appropriate procedures in handling and disposing of sharp instruments or needles and handle sharp objects with extreme care as a protective measures (86.1% , 82.4 %and 85.2%) respectively. While, the least perceived was keeping passages clearly visible and uncluttered (23,1 % unsure and 12.0% disagree) followed by consult an occupational safety specialist for safe handling heavy patients (20.4% unsure and 13.0% disagree).

Table (11) comparison of mean score between the study of nurses' intern demographic data and occupational hazards

Variables	Test	P value
Age		
ANOVA	1.46	0.23
Gender		
t–test	-2.24-	0.02*
Area of training		
ANOVA	2.67	0.02*
Safety training		
ANOVA	2.68	0.05*
Employment status		
t–test	0.48	0.63

Table(11) showed that there were statistical significant relation between total nurses perception of occupational hazards and gender , area of training and obtained safety training , while there is insignificant relation with age and employment status.

IV. Discussion

Healthcare institution like other high risk work settings characterized by a high level of exposure to hazardous agents, which dramatically endangers the health and life of healthcare workers (Abidoye et al., 2016). Therefore, World Health Organization stress on the primary prevention of workplace hazards, particularly due to the highest incidence of occupational injuries occurs in hospitals, compared to the construction and manufacturing industries (Occupational Safety and Health Administration, 2013).

The present study findings revealed that most of nursing interns gained their knowledge about occupational safety at courses of baccalaureate program. This result is consistent with a study carried out by staff Bailly et al. (2008) revealed that teaching during the curriculum was the main source of information, and safety practices information was emphasized more during the curriculum for nursing. In Palestine study carried out by Abu-Rmeileh, and Al-Dabbas, (2012) declared that the majority of the participants reported that they gained knowledge of blood borne infectious disease mainly through formal lectures followed by information from books. Moreover, in Saudi Arabia , Al Sobhi, Baniyousef, Hussain and Mehlab (2015) concluded that the main source of staff information was their previous study curriculum. While, this contrast results of Al Awas et al. (2013) who revealed that informal clinical practices and self education were the main foundation of information about occupational safety at Saudi University.

Regarding to accidental hazards, data of the present study revealed that most of nursing interns identified the main accidental hazards as follows: cuts from sharp objects, especially needle-sticks bad blades, followed by falls on wet floors considered high incidence. This was congruent with Almurr (2013) , Bhargava et al. (2013) and Eljedi (2015) who found that prevalence of sharp injuries was high. Moreover, In india study by Arazoo et al. (2015) reported that most of nursing student had high incidence of needle stick injuries. While, Abu-Rmeileh and Al-Dabbas (2012) found that wound suturing was the most common cause of injury and the highest occurrences in the emergency room.

The majority of nursing interns' highly perceived leg pains, back pains, body pains as main causes of physical occupational hazards. From researchers point of view this may be due to long standing of nursing interns especially their work schedule system twelve –hours shift. Also, most of units depend on nursing interns because of the problem of nursing shortage. Shortage of nurses and unavailability of nurses' aides, and patient lifting devices considered a main cause of leg and back pain. This was in agreement with previous studies carried out by Karimi-far, Meshkati, Nami, Samei (2008) , Abbas, Abu Zaid, Alhamdan and Fiala, (2010) and Branco , Couto , Hamann and Shimizu (2010) who mentioned that low back pain and neck pain were major occupational health problem and represents a huge burden on nursing staff and on the health care system. In the same line , Andersen , Clausen , Mortensen , Burr , and Holtermann (2011) found that health care providers showed a higher prevalence of low back pain among occupational groups. Moreover, Sreekala (2010) emphasized that the majority of nurses having varicose vein. Opposite the present study result in Egypt, at Quena University Hospital by , Morsy and Sabra (2016) who demonstrated that most of studied nurses suffer from sleep disturbances in relation to physical hazards In this study most of nursing interns exposed to chemical hazards due to exposure to natural latex gloves and other latex-containing medical devices, followed by Irritation of the eyes, nose, and throat. Opposite to the present study, Eliakimu , Manyele and Ngonyani (2008) reported that chemicals used in hospitals for cleaning such as antiseptics and disinfectants may contribute skin burns during handling and utilization . In Nigeria, Babatunde, (2009) revealed that respondents perceived chemical hazards include allergic contact dermatitis, non-adhesive surface , all hazards including corrosive acid,

inhaled chemical. Moreover, Adeoye, BamideleJ., Ntaji, and Oladele (2014) and, Cardoso, Mascarenhas and Oliveira (2010) showed that most of respondents had skin allergy from using chemicals to clean.

Findings of the present study showed that most of nursing interns exposed to MIRSA followed by hepatitis C and B respectively. Researchers interpret this due to needle stick injury that resulted from nurses recapping of the infected needle, non-adherence to safety precautions standards. This was supported by research done at western Nepal by Gyawali , Rathore, and Shankar (2013) and another study carried out by Saqer (2014) in European Gaza Hospital , who mentioned that hepatitis constitute a high biological risk among participants.

Concerning psychological hazards data showed that most of nursing interns highly exposed to irritation with everything, loss of self-control and loss of self confidence. investigators may attributed this due to powerlessness of nursing interns , lack of experience, working most of times with suffering and unconscious people, lack of support from supervisors because they considered nurses intern supplementary staff not permanent workers, as they changed every two or three months according to the planned rotation. This was consistent with Eljedi, (2015) and Morsy and Sabra (2016). While, this result was contradicted by Branco , Couto, Hamann, Shimizu (2010) who found nurses have satisfactory level of level with regard to negative feelings such as: loss of self-confidence, feeling of defeat, and long-lasting feeling of despair.

In relation to social hazards the present study revealed that nursing interns experienced difficulty in making friends, social isolation and social life difficulties respectively. In the same line a study done recently by Morsy and Sabra (2016) illustrated that the most of nurses experiencing difficulty in decision making regarding personal life followed by social life difficulties and affective relation difficulties. Incongruent with the present study results of Branco, Couto, Hamann, Shimizu (2010) and The International Council of Nurses, (2011) who admitted low level of social hazards.

However, regarding to ranking of occupational hazards, findings of the present study showed that nursing interns had high mean score for physical hazards followed by chemical hazards. While, biological hazards perceived at low level. This was supported by Alexander-Lindo, Crawford , Irving , Kurt , and Mcgrowder, (2010), In the same line, Branco , Couto , Hamann, Shimizu (2010) in the public hospital in the Federal District The study found that the incidence of physical hazards for nurses working at intensive care units were critical at a single Brazilian institution. While, the psychological and social hazard levels were reasonable. Additionally in Egypt, Morsy and Sabra (2016) concluded that nurses rank physical hazards followed by psychological and social hazards. However, in Nigeria,Abidoye et al. (2016) found that respondents reported high awareness about physical hazards, chemical hazards and biological hazards. Contrast to present study results in Gaza, by Eljedi (2015) indicate that exposure to psychological hazards was high within all occupational hazards for nursing students.

Moreover, regarding contributing factors to occupational hazards, findings of the present study showed that most of nursing interns perceived lack of educational and developmental programs for healthcare providers, regular medical examination, policies and procedures for occupational safety and in effective supervision as more contributing factors for occupational hazards. This was supported by, Wubie (2011) who reported that there was a lack of medical treatment and unavailability of occupational safety and health policy in place, and around half of the sample not receives safety and health training. Almurr (2013) reported that respondents not take a training regarding safety practices. Opposite to the present study, Eljedi (2015) reported availability of safety guidelines.

Concerning protective measures, most of nursing interns agreed about using special safety receptacles to store used needles until disposal, follow standardized procedures in dealing with and disposing of sharp instruments or needles and handle sharp objects with extreme care. Especially, nurses' interns during orientation period of the beginning of the internship year they are taking a program include lecture about hospital safety practices policies this was consistent with Al-Khatib et al. (2015) and Eljedi, (2015) and find out that the majority of nursing admitted that they used standard methods when they deal with medical wastes.

Finally, data demonstrated that there was statistical significant relation between total nurses' occupational hazards and gender, area of training and safety training, while there is no any significant relation with the employment status and age. These results are incongruent with Farrokhi, Juibari and Sanagu, (2010) who showed that there was no statistical significant relationship between nurses risks and gender. Moreover, Saqer (2014) stated that there is no significant association between the occupational hazards and the ward, gender, while results of this study in agreement with the present study regarding no significant relation between nurses risks and age group. Also, results of the present study not agree with the results of Aliyu and Auwal (2015) who found significant association between occupational hazards exposure and age.

V. Conclusion

The present study concluded that most of nursing interns' highly perceived physical hazards followed by chemical hazards and biological hazards'. The common contributing factors for occupational hazards as reported by nursing interns , lack of educational and developmental programs for healthcare providers, a lack of

regular medical examination and a lack of policies and procedures for occupational safety in the unit and ineffective supervision. Nursing interns highly perceived safe handling and disposing of used needles and sharp objects as a protective measure.

VI. Recommendations

Based on the findings of the present study the following was recommended:

- Development and dissemination of policies and guidelines of safety practices at ICU hospital-wide.
- Increase nursing inters awareness regarding biological hazards at ICU hospital-wide.
- Training program about occupational hazards and especially about protective measures.
- Implementing fitness training program to enhance promotion of an appropriate lifestyle, implementation of institutional patient handling policies and availability of ergonomic chairs and automatic adjustable patient beds to control physical hazards
- Hepatitis B vaccine must be given obligatory to all undergraduate nursing.
- Further studies are also recommended such as:
- Nurses adherence to safety guidelines
- The relation between occupational hazards training program and nurses safety practices.
- Factors affect reporting of occupational hazards

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