



A Survey Study of Staff and Employees Awareness About Occupational Hazards and Safety Practice in Zagazig University

Soad Abdelazeem Hassan^{1*}, Aida Abdel Hamid Hasan¹, Reem Abbas Abbas¹, Dina Sameh el rafey¹
¹Industrial medicine and occupational health, Faculty of Medicine, Zagazig University, Zagazig, Egypt.

*Corresponding author:

Soad Abdelazeem Hassan
Industrial medicine and occupational health,
Faculty of medicine,
Zagazig University, Egypt.
E-mail: soaad@zu.edu.eg.

Submit Date 2021-02-14 13:57:31
Revise Date 2021-03-19 11:20:11
Accept Date 2021-03-30 15:57:36

ABSTRACT

Background: Universities include complex environments with a wide range of hazards, especially in research, that represent high risk on staff. However, little is known about university staff and employees' awareness of health hazards and their adherence to safety precautions in developing countries. This study aims to assess the levels of awareness of Zagazig University staff and employees towards occupational hazards and safety practice and study the relationship with their demographic and occupational data.

Methods: A cross-sectional study was carried on 282 staff and employees (121 teaching staff 112 employees and 49 hospital health care workers) at Zagazig University, using a structured questionnaire to collect data.

Results: Results indicated that the majority (86.7%) of the studied group were aware of psychosocial hazards, followed by mechanical, chemical, biological, and physical (69.1%, 64.2%, 51.8%, and 42.2%) respectively. Only 55.7% of the studied group were aware of control measures.

Conclusions: High percentage of university staff and employees lack awareness about occupational hazards. They also lack awareness about occupational safety practice and control measures.

Keywords: university staff, occupational hazards, safety practice.



INTRODUCTION

Occupational Health is defined as the promotion and maintenance of the maximum degree of physical, mental, and social well-being of workers in all occupations by preventing departures from health, controlling risks, and the adapting of work to people, and people to their jobs [1].

Occupational hazards refer to workplace factors with a potential for harm in terms of injury or ill health. Hazards are classified into four categories: physical, chemical, biological, and psychosocial. Exposure to these hazards can cause occupational diseases and work accidents [2].

Universities are especially unique workplaces due to the potential exposure to a variety of agents representing both acute and chronic risks. Besides, principal investigators within these universities operate independently often with minimal administrative oversight making it difficult to build a strong safety culture [3].

Risks related to the academic environment are frequently perceived as being much lower than risks associated with large-scale process industry operations. While the records of hazardous materials are lower in the university environment and the number of hazards may be lower, factors such as materials of construction used in laboratories and the proximity of researchers to their equipment may link to high individual risk for laboratory workers [4].

Global changes to the academic work environment have been frequently linked to increases in job stress [5], job dissatisfaction [6], musculoskeletal disorders [7], and voice disorders at academic workplaces [8]. Research hazards as animal facilities and potentially infectious material in laboratories require professional occupational health input to the development of preventive policies and the delivery of preventive services [9].

Healthcare workers continue to face several hazards in their workplaces including musculoskeletal diseases [10], risk of infections as needle stick injuries [11], carcinogenic agents, latex allergies [12], violence, and stress [13].

Awareness about occupational health and safety plays an important role in the prevention of occupational injuries and diseases [14]. Awareness activities can be used to reinforce positive attitudes and fortify safe working behaviors [15].

This study aimed to promote the health of university staff and employees through assessing the level of awareness of Zagazig University staff and employees towards occupational hazards and safety practices and studying the relationship between their awareness and demographic and occupational data.

METHODS

This study was conducted as a cross-sectional study among teaching and hospital staff and administrative employees at Zagazig University, Sharkia Governorate, Egypt.

Exclusion Criteria are those working for less than 6 months.

Sample size & technique:

The sample size was calculated using Open Epi software 6.1 according to the following: total number of Zagazig university working force was 12965 and awareness of ergonomics hazards in a previous study was 25% [16] so at CI 95%, the sample size was calculated to be 282 participants. A multistage sampling method was used, where Zagazig University was divided into 22 faculties. Then one practical faculty (Faculty of Pharmacy) and one theoretical faculty (Faculty of Arts) was selected by simple random sampling technique then at each selected faculty, teaching staff and employees were selected by simple random sampling technique with a proportional allocation as follow 121 teaching staff (43%), 112 employees (40%) [the half of teaching staff and employee were from theoretical faculties and the half from practical faculties] and 49 hospital health care workers (17%) [nurses, technicians, and auxiliary workers].

Data collection and analysis:

The study was conducted between October 2019 and October 2020. A quasi-structured questionnaire was used for data collection [17, 18]. A pilot study was conducted on 10% of the study sample to test the feasibility of the proposed main study, to identify potential problems with the proposed design, to help development or refinement of the data collection tools, and to give the investigator

experience with the proposed participants, the setting, and the procedure. Also, it helped in testing face validity and reliability of the proposed questionnaire. The study tool included socio-demographic (score was calculated using a scale provided by (Fahmy et al., [19]) and occupational data and awareness about occupational hazards, safety practices, and control measures. It included 38 questions answered by yes “score = 2” and no “score = 1” [awareness about occupational hazards (21 questions, maximum score 42), awareness about safety practices (16 questions, maximum score 32), and awareness about control measures (one question, maximum score 2). So, the total awareness score was 76. The median of the studied group’s total awareness score was estimated to be 56 and subjects who had more than the median score were considered to have adequate awareness.

Ethical approval:

The study protocol was approved by the Institutional Review Board (IRB) of the Zagazig University, Faculty of Medicine (#5407/14-5-2019). The investigator explained the aim of the study to all participants. The participants were given the right to refuse or participate in the study. Informed written consent was obtained from all participants before filling the questionnaire. All participants were reassured about the confidentiality of any obtained information and that the study results will be used only for the purpose of research.

statistical analysis:

The collected data were computerized and statistically analyzed using the SPSS program (Statistical Package for Social Science) version 25.0 (IBM, 2017) [20]. Qualitative data were presented as frequencies and relative percentages. Quantitative data were expressed as mean (\bar{x}) \pm SD (Standard deviation). Chi-square test (χ^2) was used to test the difference between qualitative variables. Quantitative data were compared using ANOVA test. The results were considered significant when P value was <0.05 .

RESULTS

Table (1) revealed demographic and occupational data of the studied groups. The age of the studied group ranged from 23 to 65 years with a mean of 44.86 years \pm 12.22. About two-third of the studied sample were females (62.8%) and were of medium socioeconomic level (63.1%). Also, nearly half of them (57.8%) were from urban residences, while the majority of them (79.4%) were married. About 42.9% were teaching staff and 38.8% were

administrative employees. A high percentage of teaching staff (74.4%) had a doctoral degree, while nearly half (59.6) of the employees had school/institute education. Most of the studied group worked ≤ 8 hours (87.9%) and were working in day shift (74.5%). Finally, the work duration of the studied group ranged from 1 to 42 years with a mean of 21.04 ± 12.47 years.

In figure 1, the majority of the studied group (86.7%) were aware of psychosocial hazards, followed by mechanical, chemical, biological, and physical hazards (69.1%, 64.2%, 51.8%, and 42.2% respectively).

Figure (1) showed that for psychosocial hazards, the most common one the studied group was aware of was work-related stress (94.3%) and for mechanical hazard was poor posture (81%). A high percentage of the studied group were aware of bacteria and viruses as biological hazards (73%), chemical liquids (70.2%) then radiation (64.5%), while a lower percentage of them were aware of biological allergens (52.1%), noise (48.2%) then flammable materials (44.3%).

Table (2) revealed that the highest level of awareness about display screen equipment as mechanical hazards was (63.8%), for biological hazards was towards bacteria and viruses (51.4%), for chemical hazards of chemical liquids (42.9%), for physical hazards as radiation was (30.1%) and for psychosocial hazards was towards work-related stress (9.2%).

Also, (55.7%) were aware of control measures. Nearly all of the participants who aware of control measures (97.4%) were aware of staff training, pre-employment examination (94.9%), regulation of work hours (92.2%), provision of PPE (92.2%), and hand washing (86.9%), and the majority of them

were aware of proper building design (81.7%), periodic medical examination (73.9%) and proper ventilation (73.9%). A lower percentage of them were aware of biological monitoring (47.7%) and isolation of hazards and availability of control policies (43.8%), as displayed in table 3.

Table (4) showed that the mean score of awareness about occupational hazards was 36.23 ± 5.7 and the mean total awareness score was $58.83 (\pm 9.82)$ and that about half of the studied group (51.07%) had inadequate awareness about occupational hazards.

Table (5) revealed that there was a statistical significance difference among practical and hospital staff of Zagazig university hospitals and employees compared to theoretical staff and employees regarding the mean of awareness of occupational hazards, safety practice, control measures, and total awareness score and also regarding the frequency of adequate awareness.

Table (6) showed that there was a statistical significance association between age and awareness as with older age the inadequate awareness is more frequent. Also, there was statistical significance association between (sex, marital status, socioeconomic level) and awareness where females, married and low socioeconomic level participants had inadequate awareness.

Also, those who spent a longer duration in work had inadequate awareness ($p < 0.05$). Type and site of occupation, level of education & work shift are factors affecting awareness level ($p < 0.05$), as administrative employees and teaching staff of theoretical faculties, employees with school/institute education, and those who worked at rotating shift had inadequate awareness.

Table 1: Sociodemographic and occupational characteristics of the studied group of Zagazig university staff and employees

<i>Sociodemographic and occupational characteristics</i>		<i>(n=282)</i>	
Age:	<i>Mean(years) ± SD</i> <i>Range</i>	44.86 ± 12.22 23 – 65	
		No	%
Sex:	<i>Male</i> <i>Female</i>	105 177	37.2 62.8
Residence:	<i>rural</i> <i>urban</i>	119 163	42.2 57.8
Marital status:	<i>Married</i> <i>Unmarried</i>	224 58	79.4 20.6
Socioeconomic level	<i>Low</i> <i>Medium</i>	23 178	8.2 63.1

<i>Sociodemographic and occupational characteristics</i>		<i>(n=282)</i>	
	<i>High</i>	81	28.7
Occupation:	<i>Theoretical teaching staff</i>	61	21.6
	<i>Practical teaching staff</i>	60	21.3
	<i>Administrative employees</i>	112	38.8
	<i>Hospital staff</i>	49	17.4
level of education:	For teaching staff (n=121)		
	<i>University degree</i>	11	9.1
	<i>Master degree</i>	20	16.5
	<i>Doctoral degree</i>	90	74.4
	For employees and hospital staff (n=161)		
	<i>School/institute education</i>	96	59.6
	<i>University degree</i>	47	29.2
	<i>Postgraduate studies</i>	18	11.2
Duration of work: (year)	$\bar{x} \pm SD$	21.04 ± 12.47	
	<i>Range</i>	1 – 42	
Working hours:	$\leq 8 h$	248	87.9
	$> 8 h$	34	12.1
Work shift:	<i>Day shift</i>	210	74.5
	<i>Rotating shift</i>	72	25.5

Sd: Standard deviation

Table 2: Frequency distribution of the studied group in Zagazig University regarding awareness of safety practices towards different occupational hazards

Awareness of safety practices towards occupational hazards		<i>(n=282)</i>	
		No	%
Physical	Radiation	85	30.1
	Noise	38	13.5
	Electricity/ fire	64	22.7
Chemical	Chemical liquids	121	42.9
	Vapors and fumes	97	34.4
	Flammable materials	68	24.1
Biological	Bacteria and viruses	145	51.4
	Fungi	125	44.3
	Biological allergens	78	27.7
Mechanical	Display screen equipment	180	63.8
	Poor posture	130	46.1
	Musculoskeletal disorders	114	40.4
	Slippery floor	83	29.4
	Voice disorders	52	18.4
Psychosocial	Work related stress	26	9.2
	Violence	16	5.7

Table 3: Frequency distribution of the studied group in Zagazig University regarding awareness of medical and engineering control measures

Awareness of control measures		(n=282)	
		No	%
Awareness of control measures	No	125	44.3
	Yes	157	55.7
Medical measures			(n=157)
	Pre-employment examination	149	94.9
	Periodic medical examination	113	73.9
Engineering measures	Biological monitoring	73	47.7
	Proper building design	125	81.7
	Proper ventilation	113	73.9
	Isolation of hazards	67	43.8
Administrative measures	Regulation of work hours	141	92.2
	Adequate staffing	127	83.0
	Reporting to appropriate authorities	91	59.5
	Availability of control policies	67	43.8
Personal measures	Staff training	149	97.4
	Provision of PPE	141	92.2
	Hand washing	133	86.9
	Correct body posture	111	72.5

Table 4: The score of awareness regarding occupational hazards, safety practices and control measures among the studied group of Zagazig university staff & employees

Awareness score		(n=282)	
Occupational hazards awareness	$\bar{X} \pm SD$ Range	36.23 ± 5.7 21 – 42	
Safety practice awareness	$\bar{X} \pm SD$ Range	21.04 ± 4.32 16 – 31	
Control measures awareness	$\bar{X} \pm SD$ Range	1.55 ± 0.49 1 – 2	
Total Awareness score	$\bar{X} \pm SD$ Range	58.83 ± 9.82 39 – 75	
	Inadequate awareness N (%)	144 (51.07%)	
	Adequate awareness N(%)	138 (48.93%)	

\bar{X} : Mean Sd: Standard deviation

Table (5): Comparison between theoretical staff and employees, practical staff and employees and hospital staff regarding total awareness scores

Awareness score		Theoretical (n=117)	Practical (n=116)	Hospital (n=49)	F	P			
Occupational hazards awareness	$\bar{X} \pm SD$	32.07±4.56 ^a	39.56±4.87 ^b	38.3±3.13 ^b	87.21	<0.001**			
	Range	22-42	29-42	34-42					
Safety practice awareness	$\bar{X} \pm SD$	17.41±1.4 ^a	24.13±4.14 ^b	22.38±2.55 ^b	152.14	<0.001**			
	Range	16-21	17-31	18-25					
Control measures awareness	$\bar{X} \pm SD$	1.38±0.49 ^a	1.65±0.48 ^b	1.76±0.43 ^b	13.96	<0.001**			
	Range	1 - 2	1 - 2	1 - 2					
Total Awareness score	$\bar{X} \pm SD$	50.87±5.47 ^a	63.34±8.85 ^b	62.44±5.83 ^b	128.14	<0.001**			
	Range	39-64	49-75	54-70					
Total awareness score		No	%	No	%	No	%	χ^2	P

Awareness score		Theoretical (n=117)		Practical (n=116)		Hospital (n=49)		F	P
Total awareness	Adequate (n=138)	15	12.8	90	77.6	33	67.3	105.82	<0.001**
	Inadequate (n=144)	102	87.2	26	22.4	16	32.7		

F: ANOVA test χ^2 : Chi square test

NS: non significant (P>0.05) *: Significant (P<0.05) **: highly significant (P<0.001)

Groups with different letters are statistically significant.

Table 6: Association between awareness level and sociodemographic & occupational data of the studied group of Zagazig university staff and employees

Variable		Total	Inadequate (n=144)		Adequate (n=138)		χ^2	P
			No	%	No	%		
Age:	≤ 45 years	132	32	24.2	100	75.8	71.44	<0.001**
	> 45 years	150	112	74.7	38	25.3		
Duration of work:	≤ 20 years	130	30	23.1	100	76.9	75.6	<0.001**
	> 20 years	152	114	75	38	25		
Sex:	Male	105	36	34.3	69	65.7	18.84	<0.001**
	Female	177	108	61	69	39		
Residence:	Rural	119	64	53.8	55	46.2	0.60	0.43
	Urban	163	80	49.1	83	50.9		
Marital status:	Married	224	126	56.2	98	43.8	11.72	0.001*
	Unmarried	58	18	31	40	69		
Socioeconomic level	Low	23	19	82.6	4	17.4	28.59	<0.001**
	Medium	178	102	57.3	76	42.7		
	High	81	23	28.4	58	71.6		
Occupation :	Teaching staff theoretical	61	46	75.4	15	24.6	105.71	<0.001**
	Teaching staff practical	60	1	1.7	59	98.3		
	Administrative employees	112	82	73.2	30	26.8		
	Hospital staff	49	16	32.7	33	67.3		
For teaching staff, level of education:	University degree	11	4	36.4	7	63.6	3.44	0.17
	Master degree	20	4	20	16	80		
	Doctorate degree	90	38	42.2	52	57.8		
For employee & hospital staff, level of education:	School/institute education	96	90	93.8	6	6.2	109.51	<0.001**
	Graduate	47	8	17	39	83		
	Postgraduate	18	0	0	18	100		
Working hours:	less than or equal 8 h	248	128	51.6	120	48.4	0.24	0.61
	More than 8 h	34	16	47.1	18	52.9		
Work shift:	Day shift	210	98	46.7	112	53.3	6.36	0.012*
	Rotating shift	72	46	63.9	26	36.1		

χ^2 : Chi square test NS: non significant (P>0.05) *: Significant (P<0.05) **: highly significant (P<0.001)

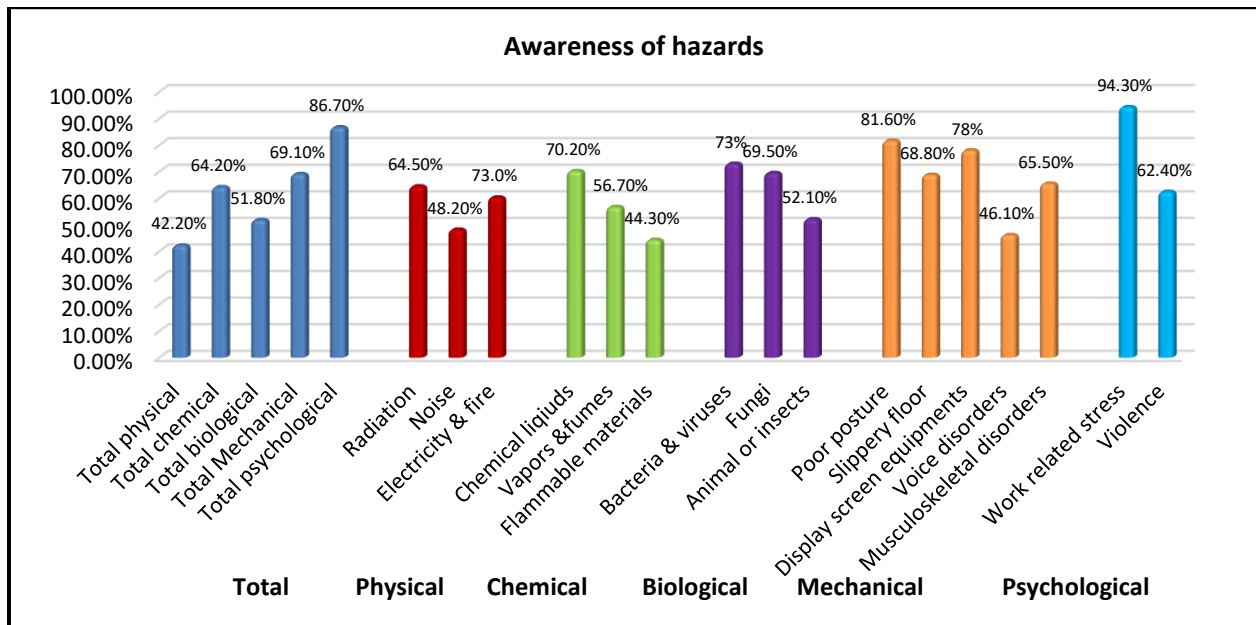


Figure (1): Frequency distribution of the studied group in Zagazig University regarding awareness of different types of occupational hazards.

DISCUSSION

Universities and colleges are likely to have a wide range of occupational health issues to manage because of the nature and diversity of their activities and staff. Universities frequently work in new fields where there is little information about risk [9].

Basic awareness about health and injury risks at the workplace can be regarded as one of the prerequisites to avoid specific dangers and to adopt generalized safety behavior. Safety awareness is associated with psychological correlates of safety climate, safety behavior, and outcomes like injuries or chronic disease [21].

Results showed that the age of the studied group ranged from 23 to 65 years with mean of 44 years in consonance with previous study findings in which the mean was 45.3 [22]. Regarding sex, most respondents were female similar to previous studies [7] and [23] where the female percentage was 66% and 81.7% respectively. From the present study, 63.1% of participants were of medium socioeconomic class and 28.7 were of high socioeconomic class similar to a study that revealed 50.1% of them were of medium socioeconomic class and 24.9 were of a high socioeconomic class [24].

Our results revealed that 42.9% were teaching staff and 74.4% of them had doctorate degree while in the study of Mohan et al. [7], 14% only had doctorate degree, also we found that 39.7% were employees and the majority of them were on a higher secondary degree in contrast to another study

in which most of them (79.6%) were on Bachelor degree [23].

In the present study, the majority of the studied group (86.7%) were aware of psychosocial hazards, while (42.2%) were aware of physical hazards. In another study among health care workers [18], the majority of the participants (82 %) recognized physical hazards. This difference may be attributed to that the majority of the study participants were of medium and high socioeconomic level, so their awareness of psychosocial hazards is high.

Regarding different occupational hazards, the recorded awareness of radiation, chemical liquids and, bacteria, and viruses was (64.5%, 70.2% and, 73%, respectively). In contrast, the results of another study that conducted on physicians showed that only 40% were aware of radiation hazard [25].

For mechanical hazards, 82% of participants were aware of poor posture. Nearly results were recorded, about (80%) poor posture, in another study [26]. This similarity may be due to the importance and impact of poor posture as a common hazard frequently seen among teaching staff and employees.

About 5.7% of the studied group were not aware of work-related stress. These results agree with previous study findings in which nearly all university staff reported high levels of stress [27]. The high level of stress may be due to high job demands, students' misbehavior, poor working conditions, and poor relationships at work.

From the present study, 30% of the studied group were aware of safety practice towards radiation. This is in agreement with the results of another study [25].

From the results of this study, it was observed that only 9.2% were aware of safety practice towards work-related stress. In contrast, a study conducted on university employees illustrated that about one-quarter of the respondents indicated that they were having difficulty dealing with work-related stress [28]. The deficient awareness level of safety practice among the studied group may be due to a lack of staff training by the university administration or due to limited understanding of staff safe behavior in the university setting.

The current study results showed that 55.7% of the studied group were aware of control measures. A similar study carried on healthcare workers that showed 64.6% of them knew control measures that are used to reduce hazards at the workplace [15]. This explains the high need for providing them with education and training services to improve their awareness about control measures to promote their health. Also, 73.9% were aware of periodic medical examination in our study, while only about half of the participants (50%) knew the correct periodic medical examination in a previous study [29].

The results demonstrated that a high percentage of participants who aware of control measures (92.2%) were aware of the provision of PPE and 86.9% were aware of hand washing. In another study, most respondents were most aware of PPE (72%) which is consistent with our results [15]. On the other hand, only 37.0% of participants knew that safety precautions include handwashing [30] and 56.7% in a previous study that carried on health care workers [31]. This may be attributed to the difference in perception about the risks they are exposed to and their susceptibility to these risks.

The study showed that 138 respondents (48.93 %) had adequate occupational hazards and safety awareness while 144 (51.07 %) respondents had inadequate awareness of occupational hazards and safety in the workplace. This is consistent with a previous study where results showed that 34.2% of the respondents had adequate awareness [15]. In contrast, another study reported that 57.6 % of respondents had adequate awareness [18]. The low level of awareness indicates the need for performing training workshops and sessions on occupational hazards, safety precautions, and the severity of occupational infections and diseases that could be fatal and life-threatening for them.

Limitations of this study include that the study was cross-sectional in design and could not establish a causal relationship among study variables and the study findings are also prone to respondents' bias arising from the use of a structured questionnaire.

CONCLUSION

It can be concluded from the results of the present study that a high percentage of university staff and employees lack awareness about occupational hazards, they were aware mostly of psychosocial hazards (86.7%). They also lack awareness about occupational safety practice and control measures.

RECOMMENDATIONS

Periodic training/seminars and intervention programs on occupational hazards and safety practice principles for all the university staff and employees. Carry out the study in other universities with different cultural backgrounds and demographical aspects and on a large geographical scale with a larger sample size to emphasize our conclusion.

Conflicts of interest: None.

Financial disclosure: None.

REFERENCES

- [1] ILO (The International Labor Office), ICN (International Council of Nurses), WHO (World Health Organization) and PSI (Public Services International): Joint Programme on Workplace Violence in the Health Sector Confidential Survey. Adapted from WHO definition of violence, Alberta Association of Registered Nurses, ILO – Violence at Work, Human Rights Act, UK, Irish Nurses Organization, Human Rights Act, UK. Geneva. 2003. Available at: https://www.who.int/violence_injury_prevention/violence/interpersonal/en/WVmanagementvictimspaper.pdf. Accessed June 26, 2019.
- [2] Tziaferi S, Sourtzi P, Kalokairinou A, Sgourou E, Koumoulas, Velonakis E: Risk assessment of physical hazards in greek hospitals combining staff's perception, experts' evaluation and objective measurements. *Saf Health Work* 2011; 2(3): 260-272.
- [3] Gutiérrez J, Emery R, Whitehead L, Felknor S: A means for measuring safety climate in the university work setting. *J Chem Health Saf* 2013; 20(6): 2-11.
- [4] Olewski T, Snakard M: Challenges in applying process safety management at university laboratories. *J Loss Prev Process Ind* 2017; 49: 209-214.
- [5] Shin J, Jung J: Academics job satisfaction and job stress across countries in the changing academic environments. *nt. J. High. Educ* 2014; 67(5): 603–620.
- [6] Hameed F, Ahmed-Baig I, Cacheiro-González M: Job satisfaction of teachers from public and private sector universities in Lahore, Pakistan: A comparative study. *Econ. Sociol.* 2018; 11(4): 230-245.
- [7] Mohan V, Justine M, Jagannathan M, Aminudin S, Johari S: Preliminary study of the patterns and physical risk factors of work-related musculoskeletal disorders among academicians in a higher learning institute. *J. Orthop. Sci* 2015; 20(2): 410-7.
- [8] Gomes N, Teixeira L, de Medeiros A: Vocal symptoms in University professors: their association with vocal resources and with work environment. *J Voice* 2018; 32(2):1-6
- [9] Venables K, Allender S: Occupational health needs of

- universities: a review with an emphasis on the United Kingdom. *Occup Environ Med* 2006; 63: 159-167.
- [10] Jakobsen M, Sundstrup E, Brandt M, Andersen L: Effect of physical exercise on musculoskeletal pain in multiple body regions among healthcare workers: Secondary analysis of a cluster randomized controlled trial. *Musculoskelet Sci Pract* 2018; 34: 89-96.
- [11] Dulon M, Lisiak B, Wendeler D, Nienhaus A: Causes of needlestick injuries in three healthcare settings: analysis of accident notifications registered six months after the implementation of EU Directive 2010/32/EU in Germany. *J. Hosp. Infect* 2017; 95(3): 306-311.
- [12] Allmers H: Occupational allergy to natural rubber latex (NRL). *Kanerva's occupational dermatology* 2020; 1015-1027.
- [13] Bula S, Deklava L, Reste J, Lusena-Ezera I: The presence of violence at work of health care personnel and their work ability. *EDP Sciences SHS web conf* 2018; 51: 13-23.
- [14] Jalali H, Baloochestani A, Maghami M, Seyed M, Malihe G: Prevention and control of operating room fires: Knowledge of staff employed by selected hospitals of Isfahan University of Medical Sciences. *Asian Nurs Res* 2016; 6(3): 342-306.
- [15] Lughah V, Ganesh B, Darus A, Retneswari M, Rosnawati M, Sujatha D: Training of occupational safety and health: knowledge among healthcare professionals in Malaysia. *Singapore Med J* 2010; 51(7): 586-591.
- [16] Funminiyi J, Akinlolu A, Agboola P: Assessment of ergonomic hazards and technostress among the workers of Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria. *Aust. J. Manag* 2014; 4(1): 27-34.
- [17] Ekwempu AI, Essien U, Naancin V, Polit U, Nnanna O: Occupational Hazards: Knowledge, Attitude, and Perception of Medical Laboratory Scientists in Nigeria. *Int. j. innov* 2018; 5(6):145-151.
- [18] Aluko O, Adebayo A, Adebisi T, Ewegbemi M, Abidoye A, Popoola B: Knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers. *BMC Res. Notes* 2016; 9(1): 71-85.
- [19] Fahmy SI, Nofal LM, Shehata SF, El Kady HM, Ibrahim HK. Updating indicators for scaling the socioeconomic level of families for health research. *J Egypt Public Health Assoc* 2015; 90(1): 1-7. doi: 10.1097/01.EPX.0000461924.05829.93.
- [20] IBM corp. Released 2017. IBM SPSS statistics for windows, Version 25.0. Armonk, NY: IBM corp.
- [21] Dragano N, Lunau T, Eikemo T, Toch-Marquardt M, van der Wel K, Bambra C. Who knows the risk? A multilevel study of systematic variations in work-related safety knowledge in the European workforce. *Occup. Environ. Med* 2015; 72(8): 553-609.
- [22] Okonoda KM, Tagurum YO, Imo CO, Nwachukwu VA, Okoli ES, James BO. Prevalence and correlates of technostress among academic staff at the University of Jos, Nigeria. *JMSCR* 2017; 5(3): 18616-18624.
- [23] Chaiklieng S, Suggaravetsiri P, BOONPRAKOB Y. Work ergonomic hazards for musculoskeletal pain among university office workers. *Walailak J. Sci. & Tech* 2010; 7(2): 169-176.
- [24] Magalhães P, Capingana DP, Mill JG. Prevalence of the metabolic syndrome and determination of optimal cut-off values of waist circumference in university employees from Angola. *Cardiovasc J Afr* 2014; 25(1): 27.
- [25] Abdellah R, Attia S, Fouad A, Abdel-Halim A: Assessment of physicians' knowledge, attitude and practices of radiation safety at Suez Canal University Hospital, Egypt. *Open J. Radiol* 2015; 5(4): 250.
- [26] Hussain H, Khanzada S, Khan K, Memon A, Feroz J, Ali S et al: Awareness of good posture and computer ergonomics among medical students of Isra University. *Int. J. Physiother* 2015; 2(6): 987-991.
- [27] Gillespie N, Walsh M, Winefield A, Dua J, Stough C: Occupational stress in universities: Staff perceptions of the causes, consequences and moderators of stress. *Work & stress* 2001; 15(1): 53-72.
- [28] Khubchandani J, Nagy M, Watkins C, Nagy S, Balls J: A Preliminary Survey of University Employee's Perceptions of Work Related Stress: Association with Diet and Exercise on Campus. *Am. J. Health Stud* 2009; 24(2):306-313.
- [29] Mostafa N, Momen M: Occupational health and safety training: knowledge, attitude and practice among technical education students. *EJOM* 2014; 38(2): 153-165.
- [30] Akagbo S, Nortey P, Ackumey M: Knowledge of standard precautions and barriers to compliance among healthcare workers in the Lower Manya Krobo District, Ghana. *BMC Res. Notes* 2017; 10(1): 432.
- [31] Abdulraheem I, Amodu M, Saka M, Bolarinwa O, Uthman M: Knowledge, awareness and compliance with standard precautions among health workers in north eastern Nigeria. *J Community Med Health Educ* 2012; 2(3): 1-5.

To Cite:

Abdelazeem Hassan, S., abdel hamid, A., abbas, R., el rafey, D. A Survey Study of Staff and Employees Awareness About Occupational Hazards and Safety Practice in Zagazig University. *Zagazig University Medical Journal*, 2023; (200-209): -. doi: 10.21608/zumj.2021.63157.2134