PATTERNS OF MORBIDITY IN EMPLOYEES OF SOME OF NASIRIYA MAJOR FACTORIES

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SUMMARY

Introduction: It is well known that occupation environment can have a negative impact on health. From academic point of view, it is mandatory to carry out descriptive and analytical scientific research extensively to provide the required knowledge to form efficient database that helps the occupational healthcare service suppliers to conduct the activities of occupational healthcare services aiming at achieving the objectives of occupational health. This is the "Why" of this study. **Method**: A sample, from the staff/ employees of two major factories in Nasriya City, were interviewed. They answered a questionnaire about their health status. **Results**: Frequency tables and descriptive statistics were obtained. Prevalence rates were compared according, to the type of work, to each other. **Conclusions**: some patterns of morbidity were found to be statistically significantly associated with the type of job of the employees/ staff.

INTRODUCTION

It is well known that occupation environment can have a negative impact on health (1). The negative effects of occupation environment on health can take one of the following forms (2):

1. Exacerbation of existing diseases
2. Causation of specific occupational diseases
3. Negative effects on productivity

This has justified the creation occupational healthcare services.

Occupational health is defined by the ILO/WHO as the promotion and maintenance of the highest degree of physical, mental, and social well-being of workers in all occupations (3). The basic occupational healthcare services can be, simply, defined as the application of the primary health care principles in the sector of occupational health (4). This will facilitate optimal physical and mental health in relation to work and the adaptation of work to the capabilities of workers in the light of their state of physical and mental health (2). The aim of these services is to provide occupational healthcare services for all working people, regardless of mode of employment, size of workplace or socioeconomic background (4). Thus, the objectives include protecting workers' health against hazards at work; adapting work environment to the capabilities of workers; enhancing the physical, mental, and social well-being of workers; minimizing the consequences of occupational hazards; and providing general healthcare services for workers (curative and preventive) (2). These objectives can be achieved through the following activities (4):

1. Surveillance of the work environment and assessment of health risks

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2. Provision of information, education and training and health promotion activities targeting the worker and the employer
3. Surveillance of workers' health
4. Adaptation of work environment to workers including protection of vulnerable groups
5. Provision of effective occupational healthcare services
   a. Internal collaboration: occupational health services must coordinate its activities with occupational hygiene, occupational safety, health education and health promotion …etc.
   b. External collaboration: collaboration with the primary healthcare system, with the nearby hospitals, with rehabilitation institutes, and with emergency units
6. Data collection and record keeping

Major categories of risks related to work (2):

1. Physical risks like noise, vibration, radiation, heat, cold, and extreme pressure
2. Chemical risks include dust, fumes, fibers, liquids, gases, mists, and vabours
3. Biological risks include insects, mites, moulds, Rickettsiae, fungi, viruses, bacteria, and parasites
4. Psychological conditions include inter-personal relations and crises, job dissatisfaction, work instability, shift work and associated stress, and feeling of insecurity
5. Ergonomic risks include posture, movement, and repetitive action
6. Occupational accidents, which result from both, work environment and human factors

From academic point of view, it is mandatory to carry out descriptive and analytical scientific research extensively to provide the required knowledge to form efficient database that help the occupational healthcare service suppliers to conduct the activities mentioned above aiming at achieving the objectives of occupational health. This is the "Why" of this study, which tends to achieve the following objectives:

1. Determine the socio-demographic characteristics of the workforce of the targeted factories
2. Determine the main health problems from which the workforce suffer
3. Determine if there is a difference in the type of health problems according to the type/place of work

METHODOLOGY

The task was conducted in steps as follows:

1. Designing the survey and structuring a questionnaire for this purpose. The questionnaire form was revised by two academic experts to improve its validity and reliability.
2. Testing the tool via a pilot study: This was conducted on a small-scale sample from the same population of the study proper.
3. Sampling the staff of the targeted factories
4. Recruiting 32 surveyors and training them
5. Conducting the study proper
6. Data inputting
7. Analysis of results
8. Writing the final report

To achieve the study objectives, a work population-based survey was designed. The study population included the staff/ employees of two major factories in Nasriya City, namely, the Electrical Power Factory and Ur State Enterprise Factories. The chosen factories were visited and after obtaining an official endorsement, the lists, which contain the names of the staff/employees, were obtained. Quasi-

systematic sampling process was followed to choose the candidate participants in the study. It was decided that about 10% of the targeted population could give inferential results that represent the whole population, when selected randomly. The survey utilised a questionnaire, administered to the respondents. Once all preparations were finalised, the surveyors started carrying out the task. Each selected candidate participant was interviewed according to the questionnaire. Descriptive and analytical statistics were obtained using the Statistical Package for Social Science (SPSS) for Windows © version 19 software programme.

RESULTS

Table (1) shows the distribution of the study population according to some selected sociodemographic characteristics. It is clear that the population are mostly males, its peak age group is the 41 to 50 years one, most of them have a duration of work from 6 to 15 years, about 37% of them are tertiary degree holders and 34% are secondary school certificate holders, more than 90% are married, and 39% of them are fieldworkers.

Table (2) shows that about 6% of the study population have suffered from an acute health problem during the month prior to the date of interview. The frequencies of these health problems are shown in Table (3); it can be noticed that upper respiratory tract infections formed about 60% of the acute problems among the study population.

Table (4) shows that about 28.53% answered that they have chronic health problem (disease or symptom/sign). In Table (5), we can see that hypertension is the most common chronic health problem exists among the study population. Diabetes comes second, 8.5%. In Table (6), it is shown that arthralgia in different joints is the commonest chronic symptom, 37.6%, suffered by the population and vision problems, 20.3%, and recurrent headache, 19.7%, come next.

When the difference in occurrence of chronic diseases and acute and chronic symptoms/signs between office work staff and fieldworkers was compared and tested for statistical significance, it was found that the only statistically significantly different health problems were Recurrent night shortness of breath, recurrent headache, and arthralgia in different joints (Tables 7 and 8).

Discussion

Women composed only one quarter of the study population (Table 1). This arrows to a conclusion that morbidity associated with being female has a relatively small scale effect. As usual, a minority of the staff/employee lies within the age group above sixty years (1.6%) and the majority of them (80.8%) below the age of 51 years. This is expected and it means that there is a low incidence and prevalence of morbidity associated with old age in the study population. Concerning the duration of work, about 83.2% of the population spent more 6 years in their job. This is associated with a considerable chance to be exposed to the hazards of the work environment, if any. According to the level of education, only 0.5% of the staff/employees were illiterate, while about 37.3% hold a university degree or more. This supposes that this population may show a high level of understanding to the risks associated to their job environment and a high level of compliance to the preventive measures that they should follow during carrying out their work tasks. About 91.2% of the population were married and this, probably, may refer to psychosocial

stability. Referring to the type of occupation, about 39.2% were fieldworkers and 60.8% office staff. This can refer to the exposure of the study population to different types of occupation environment risk factors, which may lead to different types of morbidity. When the health status of the study population was explored, the answers to the questions (Tables 2-6) showed that:

1. About 5.9% of the staff/employees answered that had complained an acute illness during the month proceeded the interview day. It does not seem an odd proportion. When those, who answered that they complained an illness, asked about the type of complaint/disease, the answers ranged from upper respiratory tract infection, gastrointestinal upset symptoms, headache, and fainting attack. None of the reported complaints showed very high frequency, but flu. It is not thought that this picture is different from that of the general population. The frequencies of the mentioned problems are very small and could not be analysed for comparison between the fieldworkers and office staff.
2. When the study population was asked about the existence of chronic diseases, the answers showed a list of diseases that is similar to that of the Iraqi population. It contained 14 diseases. Similarly, hypertension ranked the top of the list and diabetes was the second, which is very similar to the national figures.
3. The list of the chronically complained symptoms/signs showed 28 complaints. Arthralgia in different joints, vision problems, and recurrent headache were the most common complaints sorted from the highest frequency to the lowest. However, the answer here was subjective and it could not be verified.

When it was investigated if there is any difference between the frequency of chronic health problems in the office work staff and the fieldwork one (Tables 7 and 8), no any statistically significant difference in the prevalence of any of the reported diseases in the two groups could be recognised. For the chronic symptoms and signs, only three symptoms were found to be statistically significantly differing in their prevalence in the two groups. These were recurrent night shortness of breath, recurrent headache, and arthralgia in different joints. They were significantly higher among the fieldworkers. Shortness of breath can be attributed to excessive, in concentration and duration, exposure to dust-polluted air. This is consistent with what was reported in the literature (5). The recurrent headache may be the result of physical and/or psychological stress or high levels of noise associated the fieldwork. This, again, is consistent with what was found in research investigated other occupation (6). Finally, polyarthralgia mainly, may be caused by physical and/or psychological stress. Multiple joint pains were diagnosed as an outcome of many occupations worldwide (7). The failure in finding an association between other health problems and the fieldwork in the study factories may need further research. It is mandatory to restate here that the reported prevalence of these symptoms was subjective and it could not be verified. However, since it was comparative, it may carry a considerable level of accuracy and reliability.

CONCLUSION AND RECOMMENDATIONS

Scientific systematic exploring the difference in the prevalence of morbidity

among office work and fieldwork staff of the major factories in Nasiriya revealed that the only significant difference was in some symptoms (recurrent night shortness of breath, recurrent headache, and arthralgia in different joints). This difference could be associated to the difference in the work environmental conditions, possibly, the excessive exposure to occupational dust, the physical and/or psychological stress, and the high levels of noise. This is a primary step in investigating the occupational health status of the staff/employees of Nasiriya factories. It is strongly recommended to:

1. put a research plan, by the academic and healthcare service parties, to explore that health status in depth and detail
2. activate the occupational healthcare services in these factories on the primordial, primary, and secondary levels
3. activate and monitor the implementation and strict follow up of the safety legislations

TABLES

Sociodemography

Table (1): Sociodemographic characteristics of the study population

Characteristic	Frequency	Percent
Sex:		
Female	96	25.6
Male	279	74.4
Age:		
More than 60 years	6	1.6
From 51 to 60 years	66	17.6
From 41 to 50 years	139	37.1
From 31 to 40 years	111	29.6
30 years or less	53	14.1
Duration of work:		
Five years or less	63	16.8
From 6 to 10 years	73	19.5
From 11 to 15 years	70	18.7
From 16 to 20 years	44	11.7
From 21 to 25 years	63	16.8
From 26 to 30 years	37	9.8
31 years or more	25	6.7
Level of education:		
Illiterate	2	0.5
Primary school certificate holder	57	15.2
Intermediate school certificate holder	49	13.1
Secondary school certificate holder	127	33.9
Tertiary	140	37.3
Marital status:		
Single	29	7.7
Married	342	91.2
Divorced	3	.8
Widow	1	.3
Occupation:		
Fieldworker	147	39.2
Office work staff	228	60.8
Total	**375**	**100.0**

Health

Table (2): Distribution of the study population according to the presence of acute health problem

Acute illness	Frequency	Percent
None	353	94.1
Present	22	5.9
Total	**375**	**100.0**

Table (3): Distribution of those with acute health problem according to the complaint

Acute illness	Frequency	Percent
Flu	4	18.2
Sinusitis	3	13.6
Influenza	3	13.6
Bronchitis	3	13.6
Diarrhea	2	09.1
Headache	2	09.1
Esophagitis	2	09.1
Gastroenteritis	2	09.1
Fainting attack	1	04.5
Total	**22**	**100.0**

Table (4): Distribution of the study population according to the presence of chronic health problem

Chronic Health Problem	Frequency	Percent
None	268	71.47
Present	107	28.53
Total	**375**	**100.0**

Table (5): Frequency of chronic (more than 3 month duration) diseases

Chronic Disease*	Present	Percent
Hypertension	44	11.7
Diabetes mellitus	32	8.5
Allergic bronchitis	23	6.1
Asthma	13	3.5
Peptic ulcer	11	2.9
Arthritis	4	1.1
Ischemic heart disease	3	0.8
Otitis media	2	0.5
Renal stone	2	0.5
Others**	5	1.5
Total	**375**	

* A respondent may have more than one disease

** Others include urinary tract infection, migraine, chronic sinusitis, disc prolaps, and polycythemia

Table (6): Frequency of chronic (more than 3 month duration) symptoms/ signs

Chronic Symptom/ Sign*	Present	Percent
Arthralgia in different joints	141	37.6
Vision problems	76	20.3
Recurrent headache	74	19.7
Cough	56	14.9
Recurrent chest pain	42	11.2
Recurrent lion pain	41	10.9
Itching	38	10.1
Myalgia	36	9.6
Palpitation	33	8.8
Dizziness	27	7.2
Heart burn	23	6.1
Rash	20	5.3
Parasthesia	19	5.1
Hearing problems	16	4.3
Recurrent night shortness of breath	15	4.0
Recurrent abdominal pain	13	3.5
Generalised weakness	11	2.9
Tremor	10	2.7
Recurrent epistaxsis	9	2.4
Dysphagia	8	2.1
Tinnitus	8	2.1
Recurrent diarrhea	7	1.9
Ankle swelling	4	1.1
Sciatica	3	0.8
Anal fissure	2	0.5
Skin allergy	2	0.5
Hemoptysis	1	0.3
Hypotension	1	0.3
Total	**375**	

* A respondent may have more than one symptom or sign

Table (7): Comparison of the prevalence of most common chronic diseases between office work staff and fieldworkers

Chronic disease*	Positive percent		P-value
	Fieldworkers	Office work staffs	
Hypertension	12.2%	11.4%	0.934
Diabetes mellitus	8.2%	8.8%	0.987
Allergic bronchitis	4.1%	7.5%	0.267
Asthma	3.4%	3.5%	1.000
Peptic ulcer	3.4%	2.6%	0.757
Total	**147**	**228**	

* The small numbers of the other reported diseases could not allow comparison

Table (8): Comparison of the prevalence of most common chronic diseases between office work staff and fieldworkers

Symptom or sign	Positive percent		P-value
	Fieldworkers	Office work staff	
Recurrent chest pain	12.2%	10.5%	0.728
Palpitation	6.8%	10.1%	0.363
Ankle swelling	0.0%	1.8%	0.158
Cough	17.7%	13.2%	0.292
Recurrent epistaxsis	2.0%	2.6%	1.000
Recurrent night shortness of breath	**7.5%**	**1.8%**	**0.013**
Hemoptysis	0.7%	0.0%	0.392
Dysphagia	2.0%	2.2%	0.920
Recurrent abdominal pain	2.7%	3.9%	0.730
Recurrent diarrhea	2.7%	1.3%	0.440
Heart burn	6.8%	5.7%	0.831
Recurrent lion pain	8.2%	12.7%	0.226
Dizziness	6.8%	7.5%	0.973
Tremor	2.7%	2.6%	0.958
Parasthesia	4.8%	5.3%	1.000
Recurrent headache	**25.9%**	**15.8%**	**0.024**
Generalised weakness	3.4%	2.6%	0.757
Arthralgia in different joints	**44.9%**	**32.9%**	**0.026**
Myalgia	10.2%	9.2%	0.889
Itching	11.6%	9.2%	0.574
Rash	6.8%	4.4%	0.435
Vision problems	21.8%	19.3%	0.653
Tinnitus	1.4%	2.6%	0.489
Hearing problems	4.8%	3.9%	0.905
Sciatica	0.0%	1.3%	0.283
Total	**147**	**228**	

REFERENCES

1. Recommendation of the second meeting of the WHO Collaborating Centres in Occupational Health, 11-14 October 1994, Beijing, China
2. Namir G Al-Tawil and Omran S. Habib. Introduction to Occupational Health for Medical Students. Non-published lectures
4. http://www.agius.com/hew/resource/ohsilo.htm. Accessed on 01.12.11
5. http://en.wikipedia.org/wiki/Basic_Occupational_Health_Services. Accessed on 27.11.11
6. Kurt E, et al. Occupational exposures as risk factors for asthma and allergic diseases in a Turkish population. Int Arch Occup Environ Health.2011 Jan;84(1):45-52. Epub 2010 Jul.

7. Jankosky C, et. Attrition of military enlistees with a medical waiver for chronic headache, 1995-2000. Mil Med. 2006 Dec;171(12):1235-8.
8. Ranasinghe P, et al. Work related complaints of neck, shoulder and arm among computer office workers: a cross-sectional evaluation of prevalence and risk factors in a developing country. Environ Health. 2011 Aug 4;10:70.

أنماط المراضة عند العاملين في بعض المعامل الكبرى لمدينة الناصرية

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المقدمة:
إن من المعروف أن بيئة المهنة قد تؤثر على صحة الإنسان سلباً. ومن وجهة النظر الأكاديمية نجد أن من الملح إجراء الدراسات الوصفية والتحليلية بصورة مكثفة لتوفير المعلومات المطلوبة لتوفير قاعدة بيانات فعالة تساعد مقدمي خدمة رعاية الصحة المهنية في القيام بالفعاليات المطلوبة لتحقيق أهداف هذه الرعاية، وهذا هو الغرض من إجراء هذه الدراسة. **طريقة العمل**: تم أخذ عينة من العاملين في معامل مجموعتين صناعيتين في مدينة الناصرية وأجريت مع أفرادها مقابلة حسب نموذج إستبيان. أجاب المستهدفون على أسئلة الإستبيان حول حالتهم الصحية. **النتائج**: تم عرض النتائج على شكل جداول تكرارية وإحصاء وصفي وتحليلي (مقارن). **الإستنتاجات**: تم تأشير إرتباط بعض مؤشرات المراضة عند العينة إرتباطاً ذو قيمة إحصائية معنوية مع نوع العمل.

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