Assessment of Nurses' Exposure to Chronic Diseases in Thi-Qar Governorate Hospitals

تقييم تعرض الممرضين لمخاطر الأمراض المزمنة في مستشفيات محافظة ذي قار

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المستخلص:

الهدف: لتقييم تعرض الممرضين لمخاطر الأمراض المزمنة في مستشفيات محافظة ذي قار وللتعرف على العلاقة بين الخصائص الاجتماعية والديموغرافية للمرضين و الممرضات مثل العمر، الجنس، الحالة الاجتماعية، مكان العمل، سنوات والخبرة والتحصيل العلمي و التعرض للأمراض المزمنة.
المنهجية:عينة غرضية غير احتمالية تتالف من (433) ممرض تم اختيارهم من أربع مستشفيات عامة في محافظة ذي قار للفترة من الرابع تشرين الثاني ٢٠١٣ لغاية الثامن من حزيران ٢٠١٤ .
النتائج: أظهرت نتائج الدراسة الحالية أن الغالبية العظمى من المشاركين لديهم أمراض مزمنة طفيفة ومشاكل صحية (٨٦,٨%)،العمر وسنوات العمل في مجال التمريض للممرضين علاقتها عكسية مع حدوث الأمراض والمشاكل الصحية المزمنة، اكثر من نصف العينة هم من الفئة العمرية (٢٠-٢٩) سنة، اقل من نصف العينة لديهم اقل من خمس سنوات(٥>) خدمة في التمريض (٤٥%) وان اكثر من ربع العينة هم الممرضين الذين يعملون في ردهات الطوارىء, وايضا ان اقل من نصف العينة الذين لديهم شدة قليلة من الامراض المزمنة هم من خريجي المدارس الإعدادية للتمريض(٤٤,٧ %).
التوصيات: أوصت الدراسة ببدء برنامج تدريبي خاص للممرضين المتعينين حديثاً والذي يهدف إلى الوقاية من حدوث الأمراض المزمنة، زيادة الوعي والثقافة العامة للمرضين العاملين في المستشفيات من خلال البوسترات ، الندوات ، و الاعلام.

Abstract:

Objective: To assess nurses' exposure to hospitals chronic diseases hazards in Thi-Qar governorate, and to identify the association between nurses' socio-demographic characteristics of age, sex, marital status, place of work, the experience and educational attainment and their exposure to the hazards of chronic diseases.

Methodology: A purposive "non-probability" sample of (433) nurses who were selected from four public hospitals in Thi-qar governorate for the period from November 4th 2013 to June 8th of 2014.

Results: The study results indicated that that the vast majority of participants have mild chronic diseases and health problems (86.8%), nurses' age and years of working in nursing negatively correlate with occurrence of chronic disease, more than half of them are within 20-29 years-old, less than half of them have ≤ 5 years of working in nursing (45%), more than quarter of them work in emergency room, and less than half of those who have mild chronic diseases are preparatory nursing schools graduate (44.7%).

Recommendations: Initiating a training program; especially; for newly working nurses that aim to prevent the occurrence of chronic diseases, Increase public awareness and education for Nurses workers in hospitals through posters, seminars, and media

Keywords: **Nurses; Chronic Diseases; Hazards**

Introduction

Occupational health is a cross-disciplinary area concerned with protecting safety, health and welfare of people engaged in work or employment. A secondary effect of occupational health may also protect co-workers, family members, employers, customers, suppliers, nearby communities and other members of public who are affected by the workplace hazard.(5)

The workforce frequently consists of people who may be at risk for a variety of health problems, or who may be motivated to maintain their health and ensure their continued ability to work. (6)

The risk of hazard is present not only in hospitals, but in other settings where nurses are employed as in: nursing homes, institutions for the retarded, prisons, and outpatient facilities, i.e. dialysis centers, workplace health centers, or community health clinics. In hospitals, high risk areas include pediatric areas, infectious disease wards, emergency rooms, and ambulatory care facilities. (8)

The chronic disease, induced Hypertension, Diabetes mellitus, Asthma, Heart diseases, Gastric and Duodenal ulcer, and Thyroid disorder is based on the investigators' perspective; workers may experience these problems significantly due to the course of their work. (2)

Epidemiological investigations have shown an increase in prevalence or risk of certain disease among working population, such as chronic nonspecific respiratory disease, cardiovascular disease, including hypertension, musculo-skeletal disorders, gastric and duodenal ulcer. (14)

Hypertension in adults can be defined when systolic blood pressure is above 140 mmHg. and when diastolic pressure is above 90 mmHg. (3)

There is a good evidence that in most population average, blood pressure increases with age; but in different degrees after the age of 50. (1)

Diabetes mellitus is associated with other conditions or syndromes; etiology of the disease may be genetic (inherited disease), or viral factor (it occur when viral infection is present) such as the flu virus which may produce insulin dependent diabetes; or combination of many factors, heredity, virus, and an autoimmune response. The disease occur with greater prevalence at the age of 40, it is the third leading cause of death in an increasing rate of 6% yearly. (3)

A heredity tendency seems to present in two third of all known causes; attacks of allergy rhinitis is about 50 % of these cases that may end in asthma. It can be classified either as extrinsic (related to allergy) or intrinsic asthma. (4).

Chronic heart disease may include: heart failure, valves stenosis, and valve replacement. Epidemiological investigations have shown an increasing prevalence of cardiovascular diseases among working population. (13)

In jobs and occupations are considered a risk factor for stress and morbidity for gastric and duodenal ulcers. (10)

The work of the workers as health care provider make them be exposed to numerous psychosocial stresses, they may have these thyroid disorders. (2)

Methodology:

A descriptive study was carried out on 433 nurses who work, in the hospitals of Thi-Qar Governorate were selected according specific criteria .

Administrative Arrangements:

An official permission has been obtained from the Ministry of Planning/ Central Statistical Organization (CSO) for the acceptance of the questionnaire draft.

Another approval was obtained from the Ministry of Health by a contract between the Ministry of Health/ Training Center and Research Development (TCRD), and College of Nursing, and initial agreements of the Ministry of Health / Directorate Health Thi-qar Governorate, in order to collect the required data and interviewing with each Nurses subjects.

Data Collection:

Data were collected through using a questionnaire designed and developed for the purpose of the study. The questionnaire is constructed after extensive review of available literature and related studies. The study instrument consists of two parts; The first part includes participants' demographic characteristics of age, gender, level of education. The second part is related to work-related symptoms and disease used to identify potential items for the instrument of the study. It has been adopted from International Labour Organizations.

Data were collected by the researcher are from nurses who work in the hospitals of Thi-Qar Governorate through interview and by filling a questionnaire format.

Reliability of the questionnaire is determined through: pilot study "test-retest" which has been (0.85) as well as the validity determined through a panel of experts in the field.

The demographic characteristic were obtained through a direct interview with each nurses in the study using, adopting and developing questionnaire format. The data collection process had been performed from February 12th through March 14th 2014.

A statistical analysis was performed using the Microsoft office excel 2007 and SPSS package (version 19). Chi-square statistics were used to determine the presence of an association between the variables. These were used to accept or reject the hypothesis ,Which include the following :

1- Chi-Square : for testing a difference between several category nominal scales of dichotomous random variables.

$$\chi^2 = \sum_{i=1}^{n} \frac{(O_i - E_i)^2}{E_i}$$

χ^2 = Pearson's cumulative test statistic, which asymptotically approaches a χ^2 distribution.
O_i = an observed frequency;
E_i = an expected (theoretical) frequency, asserted by the null hypothesis;
n = the number of cells in the table.

2- The P. value indicates that the degree of significance was ($P \leq 0.05$) to just significant result

3- Pearson Correlation Coefficient : Person's correlation coefficient measured to determine the relationship between the studied scales and the different socio-demographic characteristics.

4- Cut-off-point: 1-1.33 = High; 1.34-1.67=Moderate; 1.68-2.00 =Low; H= High; M= Moderate; L = Low.

5- Statistical table (Frequencies & Percentages).

$$\% = \frac{\sum f}{n} \times 100$$

Standard Deviation (SD).

Standard Deviation formula =

$$\sqrt{\frac{\sum (X - X)^2}{n - 1}}$$

(Polit and Hangler, 1999).

Results:

Table (1): Participants' Socio-demographic and Employment Characteristics (N= 433)

List	Variable	Frequency	Percent%
1	**Age (years) :** Mean (SD)= 30.72 (7.477)		
	20-29	233	53.8
	30-39	138	31.9
	40-49	53	12.2
	≥ 50	9	2.1
2	**Gender**		
	Male	217	50.1
	Female	216	49.9
3	**Marital Status**		
	Single	186	43.0
	Married	238	55.0
	Divorced	6	1.4
	Widow/ Widowed	3	0.6
4	**Years of working in Nursing:** Mean (SD) = 9.7 (8.49)		
	≤ 5		
	6-10	195	45.0
	11-15	73	16.9
	16-20	77	17.8
	≥ 21	31	7.2
		57	13.1
5	**Monthly Income**		
	Sufficient	63	14.5
	Somewhat Sufficient	128	29.6
	Insufficient	242	55.9

Continued (1)

List	Variable	Frequency	Percent
6	**Residency**		
	Urban	356	82.2
	Rural	77	17.8
7	**The Unit you are working in now**		
	Emergency Room	124	28.6
	Operation Room	107	24.7
	Intensive Care Unit	102	23.6
	Surgical Ward	50	11.5
	Medical Ward	50	11.5
8	**Level of Education**		
	Nursing Course	11	2.5
	Preparatory Nursing School	197	45.5
	Diploma	186	43.0
	Bachelor Degree in Nursing	39	9.0

SD= Standard Deviation; F. Frequency; %=percentage; N= participants

Table (1) describes that the participants' mean age is 30.72 ±7.477; more than half of them is within 20-29 years-old (*n=233;* 53.8%), their gender is approximate; (*n=217;* 50.1%) for male, and (*n=216;* 49.9%) for female, more than half of them are married (*n=238;* 55.0%); the mean of years of working in nursing is 9.7 ± 8.49, less than half of them has ≤ 5 years of working in nursing (*n=19;* 45.0%), more than half of them report that their monthly income is insufficient (*n=242;* 55.9%); the majority of them live in urban areas (*n= 356;* 82.2%); and more than quarter of them work in emergency room (*n=124;* 28.6%).

Table (2): Description of Participants' Chronic Diseases and Health Problems

List	Items	Mean (SD)	Ass.
1	Hypertension	1.90 (0.306)	L
2	Diabetes mellitus	1.95 (0.220)	L
3	Asthma	1.87 (0.341)	L
4	Cardiovascular disease	1.95 (0.210)	L
5	Heart & amp; peptic ulcer	1.82 (0.387)	L
6	Duodenal ulcer	1.95 (0.225)	L
7	Thyroid disorder	1.98 (0.143)	L

SD= Standard Deviation **Ass.= Assessment** Cut-off-point: 1-1.33 = High; 1.34-1.67= Moderate; 1.68-2.00 = Low H= High ; M= Moderate; L = Low

This table describes that all of chronic diseases and health problems at low severity.

Table (3): Severity of Chronic Diseases

List	Severity	Frequency	Percent%
1	**Mild**	**376**	**86.8**
2	**Moderate**	**55**	**12.7**
3	**Severe**	**2**	**0.5**
Total		**433**	**100.0**

F= Frequency **%= Percent** **N= participants** Cut-off-point: 1-1.33 = High; 1.34-1.67= Moderate; 1.68-2.00 = Low H= High L = Low; M= Moderate

The finding of this table displays that the vast majority of participants have mild chronic diseases and health problems (*n=376;* 86.8%); and such diseases and health problems are at a moderate level for small proportion of participants (*n=55;* 12.7%

Table (4): Relationship between Study Variables

Study Variable	1	2	3
Age			
Years of Working in Nursing	.954**		
Monthly income	.081	.037	
Chronic Disease	-.396**	-.388**	.038

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table (4) demonstrates that nurse's age and years of working in nursing negatively correlate with occurrence of chronic disease (*r*=-0.396*; P<0.0*1), (r= -0.388; P<0.0*1),* respectively.

Table (5): Association between Gender and Chronic Diseases

Gender	Level of Chronic Disease			Total	df
	F. Mild	F. Moderate	F.Severe		
Male	189 (50.3%)	28 (50.9%)	0 (0.0%)	217 (50.1%)	2
Female	187 (49.7%)	27 (49.1%)	2 (100%)	216 (49.9%)	
Total	376 (100%)	55 (100%)	2 (100%)	433 (100.0%)	

F= Frequency %= Percent df= degree of freedom

χ^2obs. = 2.027; **χ^2crit.** =5.9915; df= 2; P<0.05

Table (5) describes that more than half of the participants who have mild chronic diseases are male (*n= 189;* 50.3%) vs. (*n=187;* 49.7%) for women, there is no association between gender and chronic diseases (χ^2obs. = 2.027).

Table (6). Association between Level of Education and Chronic Disease

Level of Education	**Level of Chronic Disease**			**Total**	**Df**
	F. Mild	**F. Moderate**	**F.Severe**		
Nursing School	11 (2.9%)	0 (0.0%)	0 (0.0%)	11 (2.5%)	6
Preparatory Nursing School	168 (44.7%)	27 (49.1%)	2 (100%)	197 (45.5%)	
Diploma in Nursing	158 (42.0%)	28 (50.9%)	0 (0.0%)	186 (43.0%)	
Collegian	39 (10.4%)	0 (0.0%)	0 (0.0%)	39 (9.0%)	
Total	376 (100%)	55 (100%)	5 (100%)	433 (100.0%)	

F= Frequency %= Percent df= degree of freedom

χ^2obs. = 0.093; **χ^2crit.** = 12.5916; df= 6; P<0.05

Table (6) describes that less than half of the participants who have mild chronic diseases are preparatory nursing schools graduate (*n= 168;* 44.7%), and there is no association between gender and chronic diseases (χ^2obs.= 0.093).

Table 7. Association between Chronic Diseases and Workplace

Workplace	Level of Chronic Diseases			Total	Df
	F. Mild	F. Moderate	F. Severe		
Emergency	109 (87.9%)	15 (12.1%)	0 (0.0%)	124 (28.6%)	8
Operation	91 (85.1%)	15 (14%)	1 (0.9%)	107 (24.7%)	
Resuscitation	92 (90.2%)	10 (9.8%)	0 (0.0%)	102 (23.6%)	
Medical	44 (88%)	6 (12%)	0 (0.0%)	50 (11.5%)	
Surgical	40 (80%)	9 (18%)	1 (2%)	50 (11.5%)	
Total	376 (100%)	55 (12.7%)	2 (0.5%)	433 (100%)	

F= Frequency **%= percent** **df= degree of freedom**

χ^2**obs.** = 0.558; χ^2**crit.** = 15.5073; df= 8; P<0.05

Table (7) displays that the vast majority of participants who have mild chronic health problems are those who work in emergency department (*n= 109;* 87.9%); and there is no association between level of chronic diseases and the unit that participants work in (χ^2**obs.** = 0.558).

Discussion:

The participants' mean age is 30.72 ±7.477, more than half of them are within 20-29 years-old. This result is consistent with the study of Tziaferi, et.al, who have found that most workers in nursing and medical service are graduated from technological foundation, with a mean age of 30 years old, having working experience for the general hospital.[11] This can be attributed that most nurses who are participants in this study are newly employed; they are small in age. Besides, the researcher targeted certain units and departments in the hospitals like emergency department, operation room, intensive care unit, and medical and surgical wards, and most of newly employed nurses are assigned in these unit to get the required skills and experience.

The researcher has selected an equal number of nurses based on gender.

Concerning marital status, more than half of them are married. This result is consistent with the study of Farrington, who has found that the greatest proportion of respondents are married (50%). [7] This can be attributed that most of nurses receive monthly wages that can assist them to some extent to get married.

The mean of years of working in nursing is 9.7 ± 8.49, less than half of them have ≤ 5 years of working in nursing. This result is consistent with the study of Velonakis MG and Tsalikoglou, who have found that The greatest proportion of respondents have less than 5 years of clinical experience (51%). [12] This can be attributed that most nurses are newly

employed, and have less than five years of working in nursing.

More than half of them report that their monthly income is insufficient. This can be attributed that, as mentioned earlier, most of those nurses are newly employed and the higher the years of working, the higher the monthly wages.

The majority of them live in urban areas. This can be attributed that most hospitals lie in the city center where they are more close to nurses. Moreover, most of rural men prefer to work in their farms rather than looking for other jobs.

More than quarter of them work in emergency room. This can be attributed that the greatest proportion of study sample is drawn from emergency department, because the number of nurses who work in this department is much more the number of nurses who work in other units of the hospitals.

Less than half of them have Preparatory Nursing School in level of Education. This result is consistent with the study of Marziale and Hong, who have found that In relation to the level of schooling, most nurses have high school education prevailing (54.3%) which is the minimum requirement to carry out the function.[9]

This can be attributed that the number of nursing institutes and colleges has been very limited in the last years, in comparison to the huge number of preparatory nursing schools.

The vast majority of participants have mild chronic diseases and health problems, and all of chronic diseases and health problems are at low severity. This can be attributed that most of the participants are within the 20-29 years-old age group, where the incidence of chronic diseases in such age group is very limited, and would be increased by increasing age, where the catabolism rate outweigh the anabolism rate.

Recommendations:

Initiating training program; especially; for newly working nurses that aim to prevent the occurrence of chronic diseases.

Increase public awareness and education for Nurses workers in hospitals through posters, seminars, and media

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