Prevalence of Smoking among Health Workers and Effectiveness of Instructional Booklet concerning Risks of Smoking on Health Workers' Knowledge in Baghdad Teaching Hospital

إنتشار التدخين بين العاملين الصحيين وفاعلية الكتيب الإرشادي المهتم بمخاطر التدخين على معارف العاملين الصحيين في مستشفى بغداد التعليمي

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المستخلص

الاهداف : تهدف الدراسة الحالية إلى تقييم إنتشار التدخين بين العاملين الصحيين في مستشفى بغداد التعليمي ، ومعرفة مدى فاعلية الكتيب الإرشاد المتعلق بمخاطر التدخين على معارف العاملين الصحيين في المستشفى.

منهجية البحث: أجريت دراسة شبه تجريبية للفترة من ١ تشرين الاول ٢٠١٩ إلى ١٧ اذار ٢٠٢٠. وتكونت عينة الدراسة غير الإحتمالية من (٥٠٠) مشارك كان منهم (٣٤٣ غير مدخن و ١٥٧ مدخن) من أصل (١٥٠٠) عاملاً صحيًا يعملون في مستشفى بغداد التعليمي، وشملت الدراسة الطبيب والممرض والصيدلي وأخصائي العلاج الطبيعي ومساعدي المختبرات والمعاون الطبي وعمال الخدمة. تم عمل استبيان لتقييم فاعلية الكتيب على معارف العاملين الصحيين المدخنين والذي يتكون من (٣٣) فقرة تتعلق بمخاطر التدخين على صحة الإنسان وبيئة المريض. تم تحديد ثبات أداة القياس من خلال مقياس كرون باخ والمساوي (٠.٩٠٥) حددت مصداقية الاداة من خلال عرضها على مجموعة من الخبراء.

النتائج: أظهرت نتائج الدراسة بتحسن معارف المدخنين المتعلقة بمخاطر التدخين على الحالة الصحية الشخصية ، حيث كان (٥٠.٩٪) منهم ليس لديهم المعارف المقبولة في الإختبار القلبي للكتيب الإرشادي، بينما تحسنت معارفهم في الإختبار البعدي إلى (٨١.٦٪)، وكذلك تحسنت معارفهم المتعلقة بمخاطر التدخين على بيئة المستشفى من (٥١.٦٪) قبل الاختبار إلى (٨٦.٣٨٪) في الإختبار البعدي. وأشارت نتائج الدراسة إلى وجود فروقات ذات دلالة معنوية عالية بين فاعلية الكتيب الإرشادي ومعارف العاملين المتعلقة بمخاطر التدخين على الصحة الشخصية وبيئة المريض وبمستوى معنوية أقل أو يساوي (٠.٠٠٥).

التوصيات: توصي الدراسة بإجراء دراسات مكثفة وشاملة واسعة النطاق (على المستوى الوطني) لتحسين معارف العاملين الصحيين المتعلقة بمخاطر التدخين على صحة الإنسان والبيئة الصحية والعمل على تطبيق قانون العقوبات على المدخنين داخل المستشفيات والمؤسسات الصحية.

الكلمات المفتاحية: إنتشار التدخين، مخاطر التدخين، العاملين الصحيين، الكتيب الإرشادي، التدخين في المؤسسات الصحية

Abstract

Objective(s): The present study aims at assessing the prevalence of smoking among health workers in Baghdad Teaching Hospital and to find out the effectiveness of instructional booklet concerning risk of smoking on health workers' knowledge in hospital.

Methodology: A pre-experimental design study was conducted from 1st of October 2019 to 17th of March 2020. A non-probability sample consists of (500) participant (343 non-smokers and 157 smokers) from (1500) health workers in Baghdad Teaching Hospital, they included the physicians, nurses, pharmacists, physiotherapists, Laboratory Technicians, Medical Assistants. A questionnaire is constructed to evaluate the effectiveness of instructional booklet on health workers' knowledge about risks of smoking which consists of (33) items. Reliability of the questionnaire is determined through the use of internal consistency reliability and the computation of Cronbach Alpha Correlation Coefficient which is equal to (0.905) and the content validity of the questionnaire is determined through a panel of experts.

Results: The results of the study show that there is improvement of smokers' knowledge concerning the effect of smoking on personal health status which is (50.9%), high percent of them not have enough knowledge at pretest while the improved their knowledge at posttest to (81.6%), and their knowledge about risk of smoking on hospital environment is improved from (51.6%) at pretest to (86.38%) at posttest, and there is a highly significant between the effectiveness of the instructional booklet and health workers' knowledge about the risk of smoking on personal health at $P \leq 0.05$ level.

Recommendations: The study recommends that extensive and comprehensive studies, at the national level, could be conducted to improve the knowledge of health workers regarding the risks of smoking to human health and environment, and work to apply the penal code to the smokers inside hospitals and health institutions.

Keywords: Prevalence of smoking, Risk of Smoking, Health Workers, Instructional Booklet, Smoking in Health Institutions

Introduction

The World Health Organization (WHO) has reported that tobacco smoking remains the world's leading cause of avoidable death killing at least (6) million people causing hundreds of billions of dollars of financial damage worldwide each year. Several of these deaths happened in low-and middle-income societies, and in the next few decades this gap is projected to expand further. As current trends persist, the WHO predicted that by 2030 tobacco will kill further than 8 million people globally each year, and 80% of those early deaths among residents living in low-and middle-income countries [(1)].

Smoking tobacco is a significant risk factor for cardiovascular, respiratory, and malignant disorders which can be prevented [(2)]. Tobacco smoking infected (100) million people in the 20th century and is accounting for (5.4) million deaths per year according to the 2008 WHO study on the global tobacco epidemic (WTE) [(1)].

Nevertheless, in developed countries, the frequency of smoking is projected to grow from (8% to 20%) among women, and to decline from (60% to 45%) among men by 2025. Passive smoking exposure is also widespread in developed countries, and this may further increase the risk of diseases induced by smoking among non-smokers [(3)].

Another solution to smoking risk reduction is to enable health care workers to engage in programs against cigarette smoking [(4)]. Teaching hospitals are great places for such a reason because they can receive several patients who usually come back for follow-up or further care many times. Therefore, healthcare providers at these hospitals will serve as role models for their patients and better inform them about cessation of smoking. In comparison, health care practitioners who are smokers pose a significant obstacle to anti-smoking efforts, because they may have negative perceptions that discourage them from giving anti-smoking advice [(5)].

Methodology

A pre-experimental design study is used to achieve the objectives of the study from 1st of October 2019 to 17th of March 2020. The study is conducted in Baghdad Teaching Hospital. A non-probability sample consists of (500) participant (343 non-smokers and 157 smokers) from (1500) healthy workers. They include

physicians, nurses, pharmacists, physiotherapists, laboratory technicians, and medical assistants. The instructional booklet is designed to enhancing and improving the knowledge of health workers about the risks of smoking on health status and environment of hospital.

Ethical Considerations: Scientific Research Ethical Committee at the University of Baghdad, College of Nursing has approved the study to be conducted. All health workers who have participated in the study have signed consent form for the human subjects' rights.

A questionnaire is constructed to evaluate the effectiveness of booklet on health workers' knowledge which It consists of two parts; part I: It is concerned with demographic characteristics which consist of gender, age, level of education, marital status, level of income, residency, and years of experience. Part II: It includes two domains, first domain: concerning smokers' knowledge about the risk of smoking (23) item. and second domain is concerned with the risks of smoking on the patients and environment which of (10) items.

Reliability of the questionnaire is determined through the determination of internal consistency reliability and content validity is determined through a panel of experts.

The data are analyzed through the use of the Statistical Package of Social Sciences (SPSS) version 23 through descriptive statistics of frequencies, percentages and standard deviation, mean of scores and inferential statistics of analysis of variance (ANOVA).

Results

Table (1): Distribution of Smokers by Their Demographic Characteristics (n=157)

Variables	Classification	Frequency	Percent
Age	18-27year	10	6.37
	28-37year	121	77.0
	38-47year	17	10.83
	48-57year	9	5.8
Mean ± SD		19.52 ± 15.637	
Gender	Males	144	91.7
	Females	13	8.3
Level of Education	Primary school	18	11.4
	Secondary School	47	30.0
	Diploma	40	25.4
	Bachelor's degree	32	20.5
	Master's degree or doctorate	20	12.7
Unit	Medical and Surgical	79	50.3
	Emergency	38	24.2
	Laboratory	22	14.0
	Operation Room	18	11.5
Years of Experience	1-5 Year	31	19.7
	6-10 year	51	32.6
	11-15 year	42	26.6
	16-20 year	21	13.4
	>20 year	12	7.7
Residency	In Hospital	12	7.6
	Out Hospital	145	92.4
Types of Smoking	Cigarette	73	46.5
	Hookah	22	14.0
	Electronic Hookah	25	15.9
	Mix	37	23.6
Duration of Smoking	15-24 year	93	59.2
	25-34 year	64	40.8
Number of Smoking	1-3	102	65.0
	4-6	46	29.3
	7-9	9	5.7

This table presents that (77%) of the smokers are at age group (28-37) years old at mean and standard deviation (19.52 ± 15.637), (91.75%) of them was males, (30%) of them have secondary school education, (50.3%) of health workers who are working in medical and surgical units, high percent of them have (6-10) years of experiences which is (32.6%). The majority of them are living outside the hospital. (46.5%) are smoking cigarette. High percent of smokers (59.2) is smoking for (15-24) years ago, (65%) of the smokers are smoking (1-3) times in the hospital.

Table (2): Distribution of Smokers According to Health Worker Specialty

(N= 500)

Health Workers	Nonsmokers		Smokers	
	Frequency	Percent	Frequency	Percent
Service workers	52	10.4	18	3.6
Nurses	129	25.8	71	14.2
Laboratory Technicians	36	7.2	24	4.8
Medical Assistants	43	8.6	12	2.4
Pharmacists	27	5.4	8	1.6
Physicians	38	7.6	12	2.4
Physiotherapist	18	3.6	12	2.4
Total	**343**	**68.6**	**157**	**31.4**

This table depicts that the high percent 343 (68.6%) of the study sample are nonsmokers more than smokers, and the high percent (14.2%) from smokers is a nurses and services workers is (3.6%).

Table (3): Distribution of Smokers Regarding to Their Specialties

Health Workers	Frequency	Percent
Service Workers	18	11.46
Nurses	**71**	**45.23**
Laboratory Technicians	**24**	**15.28**
Medical Assistant	12	7.64
Pharmacists	**8**	**5.09**
Physicians	12	7.65
Physiotherapists	12	7.65
Total	**157**	**100.0**

This table shows the distribution of smokers regarding to their specialties which is (45.23%) of them was nurses, (15.28%) of them are working as laboratory technicians and low percent is for pharmacist which is (5.09%).

Table (4): Effectiveness of Instructional Booklet on Smokers' Knowledge at Pretest and Posttest Episodes

Total knowledge		Pretest		Posttest	
		Frequency	Percent	Frequency	Percent
Knowledge related to effect of smoking on personal health status	**Incorrect**	80	50.9	29	18.4
	Correct	77	49.1	128	81.6
	Total	157	100.0	157	100.0
Knowledge related to risk of smoking on hospital environment	**Incorrect**	81	51.6	12	7.9
	Not sure	28	17.8	9	5.72
	Correct	48	30.6	136	86.38
	Total	157	100.0	157	100.0

The results, of this table, show the improvement of smokers' knowledge concerning the effect of smoking on personal health status is (50.9%) of them not having enough knowledge at pretest while their knowledge has been improved at posttest to (81.6%) and their knowledge about risk of smoking in hospital is improved from (51.6%) at pretest to (86.38%) at posttest.

Table (5): Distribution of The Study Sample Response's regarding to their Specialties about Risk of Smoking at Pretest and Posttest Episodes

Knowledge Related Risk of Smoking	Pretest			Posttest		
Classification of Specialties	**Incorrect**	**Correct**	**Total**	**Incorrect**	**Correct**	**Total**
Service workers	**15**	3	18	3	15	18
Nurses	**46**	25	71	0	71	71
Laboratory Technicians	**15**	9	24	0	24	24
Medical Assistants	**9**	3	12	0	12	12
Pharmacists	1	7	8	0	8	8
Physicians	1	11	12	0	12	12
Physiotherapists	2	10	12	0	12	12
Total	**89**	**68**	**157**	**3**	**154**	**157**
Percentage (%)	**57.0**	**43.0**	**100**	**1.9**	**98.1**	**100**

The results, of this table, reveal that their knowledge has been improved between pretest and posttest episodes which are (57.0%) for incorrect responses at pretest while (98.1%) are for correct responses at posttest.

Table (6): Statistical Differences between Effectiveness of Booklet on Study Sample Knowledge regarding Demographic Characteristics

Variables		Sum of Squares	df	Mean Square	F.	Sig.
Age	**Between Groups**	5780.863	27	214.106	.853	.675 N.S
	Within Groups	32362.347	129	250.871		
	Total	38143.210	156			
Level of education	**Between Groups**	53.440	27	1.979	2.184	**.002 S**
	Within Groups	116.916	129	.906		
	Total	170.357	156			
Specialty	**Between Groups**	116.372	27	4.310	1.501	.070 N.S
	Within Groups	370.469	129	2.872		
	Total	486.841	156			
Units	**Between Groups**	19.336	27	.716	1.490	.074 N.S
	Within Groups	61.989	129	.481		
	Total	81.325	156			
Years of Experiences	**Between Groups**	17.102	27	.633	.652	.902 N.S
	Within Groups	125.331	129	.972		
	Total	142.433	156			
Residency	**Between Groups**	.747	27	.028	.345	.999 N.S
	Within Groups	10.336	129	.080		
	Total	11.083	156			

df= degree of freedom, F= F-value, S. = significant, N.S. = non-significant

The results of table (6) revealed that there were no significantly differences between the effectiveness of booklet on healthy workers Knowledge and age, type of unit, specialty, Years of experiences and residency at P≤0.05 level. But there were a significant effect of instruction booklet with level of education P≤0.05 level.

Table (7): Effectiveness of the Instructional Booklet on Health Workers' Knowledge about Risk of Smoking on Personal Health

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	516.592	6	86.099	5.799	0.000
Within Groups	2226.974	150	14.846		**H.S**
Total	2743.567	156			

df= Degree of freedom, F= Fisher test, H.S= highly significant.

This table presents that there is highly significant between the effectiveness of the instructional booklet at pretest and posttest on health workers' knowledge about the risk of smoking on personal health at P≤0.05 level.

Table (8): Effectiveness of Instructional Booklet on Health Workers' Knowledge about Risk of Smoking on the Patient's Environment

Source of Variance	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2328.502	27	86.241	152.503	0.000
Within Groups	72.950	129	.566		**H.S**
Total	2401.452	156			

df= degree of freedom, F= Fisher test, H.S= highly significant.

This table displays that there is highly significant between the effectiveness of the instructional booklet at pre-test and posttest on health workers' knowledge about the risk of smoking on the patient's environment at P≤0.05 level.

Discussion

The study has included 500 health workers to assess the smoking among them, the result of study revealed that 343 (68.6%) not smoker and 157 (31.4%) was smoker.(14.2%) of them was nurses and (3.6%) services workers, (4.8%) laboratory technicians and (2.4%) is physicians and physiotherapists. The high percent of smoking is (45.23%) among nurses, (15.28%) among Laboratory technicians, and low percent is among pharmacists which is (5.09%). Supportive evidence is reported in a cross-sectional study that includes (400) healthcare professionals who are recruited from primary healthcare centers in northern Jordan. They find that the (74.5%) of participants are nonsmoker. and the high percent (42.3 %) from smokers are nurses [(6)].

High percent of smokers is at age group (28-37) years old, which of (77%) and the mean and standard deviation of age is (19.52 ± 15.637). (91.75) of them are males, (30%) of them have secondary school education, (50.3%) of them working in medical and surgical units. High percent of participant have (6-10) years of experiences which of (32.6%), high present of them live outside of the hospital. (46.5% of) participant is smoking cigarette than other type of smoking. High percent of smoker 40.8% was smoking since (25-34) years ago, 65% of them smokes 1-3 time in day. Through the assess 708 healthcare professionals in governmental and nongovernmental hospitals in Nablus city (Palestine) [(4)] to find the prevalence and personal attitudes towards tobacco smoking among Palestinian healthcare professionals, they funded that (54.75%) of healthcare professionals at age (25 to 34) years, The mean ± SD of the age of the participants was (31.4 ± 9.6) years while the median age was 28. And (54.7%) of their sample was males

In a study which included 1759 health workers in Belo Horizonte, they funded that the high percent of health

worker 54.2 have high school or technical studies graduated [7]

The study which estimated 18.9 million health care and social assistance about smoking among healthy workers in the health care setting and social assistance sector. They funded that the nursing staff was highest prevalence of smoking (26.9%), and the average number of cigarettes smoked per day [8].

The effectiveness of instruction booklet has positive effect on smokers' knowledge toward risk of smoking on patient environment through the percent of their knowledge between pre and posttest which of (51.6%) of them have not knowledge about risk of smoking, while the percent was improved to (86.38%) at posttest. In a study to evaluate (202) hospital workers from three organizations by online training program about smoking in Bolivia, Guatemala and Paraguay, they reveal that the doctors and former smokers, and those from Paraguay obtained higher scores at posttest [11].

The effects of selected liquid chemicals used in e-cigarettes, such as propylene glycol/vegetable glycerin, nicotine and flavorings, on living organisms in Poland. They explore that the e-cigarette liquid has potentially detrimental effects on cells in vitro, and on animals and humans in vivo. While e-liquid exposure can adversely influence the physiology of living organisms, they recommended the environmental influence of e-cigarette use is closely connected with the emission of airborne particulate matter, and the nicotine impacts on delivery systems on living organisms and the environment. [12]

The effectiveness of booklet was clear improved the knowledge of smokers between pre and post instruction booklet which of 57.0% was incorrect responses to 98.1% correctly response at posttest. [13]

Conducted in a secondary analysis of the global youth tobacco survey, a nationally representative cross-sectional study on students. They included (180) participating countries, (25) included optional waterpipe tobacco smoking questions: (15) Eastern Mediterranean and ten Eastern European countries. They calculate the prevalence of current (past 30-day) waterpipe tobacco use, including dual waterpipe and other tobacco use, they revealed that waterpipe smoking prevalence is highest in Lebanon (36.9%), West Bank (32.7%) and parts of Eastern Europe Latvia (22.7%), Czech Republic (22.1%), Estonia (21.9%). These countries also record greater than (10%) prevalence of dual waterpipe and cigarette use. They conclude that water pipe tobacco smoking, including dual waterpipe and cigarette use, is alarmingly high in several Eastern Mediterranean and Eastern European countries.

The results of present study indicate that there are no significant differences between the effectiveness of booklet on Knowledge of health workers and their unit of working, age, specialty, years of experiences and residency at $P \leq 0.05$ level. But there were a significant effect of instruction booklet with level of education at $P \leq 0.05$ level. A study has included (477) students to assess the impact of education programs on smoking

prevention in Aceh, Indonesia. Eight schools are randomly assigned to a control group and eight school as interventoin group. Students in the intervention groups received eight classroom sessions on smoking prevention education over two months. The result of their study show that there are no significant differences were noted between groups with regard to gender, age, year of study/grades, and current living conditions. But the Scores for knowledge of health-related aspects of smoking was a significant difference between groups in health knowledge scores at baseline ($p < 0.001$) after intervention.

The results of present study depict that there is highly significant between the effectiveness of booklet at pretest and posttest on health workers about risk of smoking on personal health at $P \leq 0.05$ level. A study evaluates the effectiveness of a structured teaching program on improving knowledge of female hospital housekeeping personnel regarding harmful impact of tobacco chewing and how to quit and foster an unfavorable attitude toward tobacco chewing which is conducted on (35) female hospital housekeeping personnel. They show that at the end of (4) weeks following the structure teaching program, the participants have significantly improved their knowledge regarding the harmful health impact of tobacco chewing and how to quit ($p=0.001$) (9), and shows a significantly less favorable attitudes toward tobacco chewing ($p=0.001$) (10).

The instructional booklet is determined to be effective on smokers' knowledge related to risk of smoking in hospital which clear through the changes the knowledge at posttest which of highly significant between pre and posttest at $P \leq 0.05$ level. A study ssesses the effect of anti-smoking program on the knowledge, attitude and practice of cigarette smoking in Lagos State, Nigeria. There are significant increments in the mean knowledge and attitude scores after the intervention. There is however no statistically significant change in the current smoking habits of respondents ($p=0.41$) in the intervention group. Nevertheless, in the intervention group, the number of never smokers who reported that they were likely to initiate cigarette smoking within the next year significantly reduced. There is also a significant increase in the proportion of current smokers who desired to quit smoking (14).

Recommendations

1. The study recommended to an intensive and comprehensive large population-based (national level) studies could be conducted to improve health workers knowledges concerning risk of smoking on human health and environment.
2. Instruct policy to apply in hospital and healthy setting to avoid smoking.

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