Smoking Behavior Among School Students At Al-Doura/Al- Kurkh/Baghdad Year 2014.

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ABSTRACT

Background: Most adult smokers start smoking regularly some time before 18 years of age. Cigarette smoking is a major 'preventable' cause of morbidity and mortality worldwide. It is well-known that smoking has hazardous effect on many systems like pulmonary and cardiovascular system.

Objectives: Study the prevalence of smoking among school pupils according to the mode of smoking, age, school grade, school environment and possible health risk associated with smoking.

Type of the study: A cross-sectional study.

Methods: Study was conducted between 1st of March 2014 to 30th of May 2014 at Al-Doura/Al- Kurkh/Baghdad by using convenient sample, including all pupils from 6 schools. The schools were 2 secondary schools, 3 intermediate schools and 1 professional secondary school from second Al-Kurkh education directorate. A total of 1258 boy pupils were studied. An anonymous self-completion questionnaire was used. The questionnaire included 15 questions (3 open questions and 12 close questions) about sociodemographic information, smoking information, and possible health disorders associated with smoking.

Results: The present study had shown that the prevalence of smoking habits both (12.1% cigarette and 2.3% shisha) increased with age, class grade, and broader school environment. Both cigarette and shisha smoking produce various health disorders among schools' pupils. The results indicate that dry cough more frequent among shisha smoking pupils which was statistically highly significant ($P < 0.001$).

Conclusions: Age, school grade of pupils and broader school environment play the major rule in the increasing prevalence of smoking among pupils, both cigarette and shisha smoking had hazardous effect on pupils' health.

Keywords: smoking, cigarette, shisha, schools, Baghdad

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Despite aggressive tobacco control efforts, adolescents continue to initiate smoking and lack the supportive resources to quit. The tobacco use is learned from an adolescent's social environment and influenced by psychological and genetic factors [(1)]. Smoking imagery in film may play a role in the development of smoking intentions through inflating the perception of smoking prevalence among adolescents and presenting socially attractive images [(2)], other advertising and the broadcast media (Television, radio, newspapers, magazines) are an important risk factors of smoking status in developing countries which lead adolescents to start smoking [(3)]. The smoking behavior in boys increases with a broader school environment with a high students perceptions of smoking prevalence. Attending a school where the students reported a perception of high smoking prevalence had a greater effect on smoking behavior in boys than girls when compared with students attending a lower smoking prevalence school, after adjustment for student-level characteristics [(4)]. Joanne et.al found many factors that predict the early initiation of smoking in schoolchildren such as race, socioeconomic status and pubertal stage. Schoolchildren with low socioeconomic status, from rural areas and higher pubertal stage were more likely to experiment with smoking earlier than their peers [(5)].

Ministry of Health (MOH) conducted the Global Youth Tobacco Survey (GYTS) in Baghdad in 2008. GYTS is a school-based survey of students aged 13--15 years, Based on GYTS results, 7.4% of students aged 13--15 years reported having ever smoked cigarettes, 12.9% had ever smoked shisha, 3.2% currently smoked cigarettes, and 6.3% currently smoked shisha [(6,7)]. A study done in Baghdad among medical students at three different medical colleges during the period June 2005 to June 2006 revealed that the prevalence of cigarette smoking among medical students was 21%; about 48% of them started smoking before the first year of medical school [(8)]. The Global Youth Tobacco Survey, conducted in the region of Kurdistan, Iraq in 2006, among in-school adolescents from 13 to 15 years old found that the overall prevalence of current cigarette smoking was 15.3% and 2.7% in boys and girls respectively [(9)]. A report from the Eastern Mediterranean Region Office of the WHO (EMRO) concluded that current smoking prevalence increased to 24% between 1990 and 1997. The report estimated that half of adult males in the Middle East are smokers, with Egypt showing the highest number of people that use tobacco. The report showed that in the states of the Gulf Cooperation Council, 50% of students aged 14 to 18 years smoke, and around 25% of smokers started between the ages of

10 and 15 years [10]. Additionally, the recent increasing prevalence of shisha (water pipe) smoking, especially among both male and female youths, represents a further serious concern. The prevalence of shisha smoking among university students was 53% in Syria and 31% in Jordan [11,12].

Researches from Turkey conducted in schools show that smoking has increased from 18.7 % to 29.4 % between the years 1991 to 1995 and also adolescents who smoke everyday forms 22 % of the group [13].

Smoking well known risk factor which causes heart disease, stroke, chronic obstructive pulmonary disease (COPD) (chronic bronchitis and emphysema), and worsens asthma symptoms and coughing in adults. Smokers are at higher risk of developing pneumonia, tuberculosis, and other airway infections [14,15,16]. It is necessary for the present study to focus the attention on this important issue in Iraq.

The aim of the present study is to study the smoking prevalence among school pupils according the mode of smoking, age, school grade, school environment and possible health risk associated with smoking.

Materials and Methods: This is a cross-sectional study; it was conducted between 1st of March 2014 to 30th of May 2014, from 6 schools at Al-Doura/Al- Kurkh/Baghdad by using convenient sample. From 6 schools included, where 2 secondary schools, 3 intermediate schools and 1 professional secondary school these schools were from second Al- Kurkh education directorate. The total number of pupils was 1900 pupils. A total of 1258 boy pupils were included. All pupils attending these schools at this period and presence on the day of collection questionnaire were included, and any pupil was not presence at the day of collection of questionnaire was not included in the study. Therefore minority of pupils of sixth classes were included because majority of them not attending schools at this period due to preparing for final exam.

The questionnaire was done by the researcher. A pilot study was done, to determine compliance of pupils, any difficulties, weak point during application questionnaire and it's completeness & validity, 20 cases examined during pilot study was been excluded.

After get permission from all headmasters of all schools, an anonymous self-completion questionnaire was used. The questionnaire included 15 questions (3 open questions and 12 close questions) about Socio-demographic information, smoking information, and possible health disorders associated with smoking. Broader school environment define as school with surface area equal or more than 2500 meter square (m^2). Number of cigarettes is the number of cigarettes smoked per day. For ethical consideration the aim of the study and all questions were explained by researcher to every pupil and his verbal agreement was taken before completing the questionnaire.

Data analysis: Data entry followed by descriptive, and inferential statistics were carried out by using software program for statistical package for the social science (SPSS) version 16. Chi-Square (χ^2) and correlation test were used to test different variables. Accepted probability cutoff for significance were set to be ≤ 0.05 denoting significant, and ≤ 0.01 denoting highly significant statistical test results. Any value more than 0.05 was considered non- significant.

Results: The study group included 1258 pupils with age range 10 years, 12-22 years, with mean ± SD 15.66 ±2.05 years from six schools at Al-Doura/Al-Kurkh/Baghdad. Table 1 shows the prevalence of smoking habit among students, 12.1% was cigarette smokers, 2.3% shisha smokers while nonsmokers was 85.6% of the total study population.

Table 1 the prevalence of smoking according to type of habit among students.

Smoking habit	Frequency	Percent
cigarette smoker	153	12.1
shisha smoker	30	2.3
nonsmoker	1075	85.6
Total	1258	100%

Table 2 demonstrate the prevalence of smoking among students according to their level of education and smoking habit, whereas the higher prevalence of smoking among 5th secondary class students 17.8%, while those for shisha smoking found among 4th secondary class students 6.2%, 36.8%. The 6th secondary class, 2st intermediate, and 1st intermediate class students showed the higher prevalence of nonsmoker 94.4%, 93.5% and 90.7% respectively.

Table 3 shows distribution of smoking habit among students according to their schools, whereas the higher prevalence of cigarette and shisha smoking found among students of Al- Maaref secondary school, Al-Maarefa professional secondary school, and Nebukudnusar secondary school and 18.2%, 14.5 %, and 14.3% respectively. The highest prevalence of nonsmoking habit found among student of Hammurabi intermediate school 91.7%. Table 4 shows distribution of smoking habit among students according to their age categories which demonstrated the higher prevalence of cigarette smoking (21.5%, 12.5% respectively) was

among students with age category 18 years and more and 15-17 years. The higher prevalence of shisha smoking (3.8%, 2.9% respectively) was among students with age category 15-17 years and 18 years and more. While the higher prevalence of nonsmoking was 92.8% found among students with age category 12-14 years. Figure 1- the scattered diagram show no correlation between age of students and the number of cigarettes smoked (severity of smoking) per day (R^2 = 0.08, P.value > 0.05). Table 5 demonstrate the prevalence of various signs and symptoms associated with smoking among students in relation to type of smoking, whereas the wet cough and more than one symptom had the highest prevalence among students with cigarette smoking 30.1%, 26.1% respectively, while dry cough among students shisha smoking 36.6%. The cigarette's smoking students reported the lowest prevalence of increase incidence of flue and bronchitis 0.6% while shisha smoker reported none for this condition. Table 6 Chi-Squre χ^2 was applied and show a highly significant difference according to mode of smoking among smokers in producing dry cough (χ^2= 17.47, P.value < 0.001, d.f = 1) while for other signs and symptoms the difference was not significant (P.value > 0.05).

Table 2 the prevalence of smoking among students according to their level of education and smoking habit.

Education level	Smoking habits					
	No smoking	%	Cigarette smoking	%	Shisha smoking	%
1st intermediate class	359	90.7	36	9.1	1	0.2
2nd intermediate class	145	93.5	9	5.8	1	0.7
3rd intermediate class	82	85.4	13	13.5	1	1.1
4th secondary class	193	80.5	32	13.3	15	6.2
5th secondary class	279	79.1	63	17.8	11	3.1
6th secondary class	17	94.4	0	0	1	5.6
Total (1258 students)	1075	No smoking	153	Cigarette smoking	30	Shisha smoking

Table 3 shows distribution of smoking habit among students according to their schools.

Name of the schools	Smoking habit					
	No smoking	%	Cigarette smoking	%	Shisha smoking	%
Al- Maaref secondary school	143	69.7	37	18.2	25	12.1
Nebukudnusar secondary school	250	85.3	42	14.3	1	0.4
Al- Nejaah intermediate school	110	88.7	13	10.5	1	0.8
Hammurabi intermediate school	166	91.7	15	8.3	0	0
Al- Doura intermediate school	310	90.6	30	8.8	2	0.6

Al-Maarefa professional secondary school	96	86.6	16	14,5	1	0.9
Total (1258 students)	1075	No smoking	153	Cigarette smoking	30	Shisha smoking

Table 4 shows distribution of smoking habit among students according to their age categories.

Age categories	Smoking habit					
	No smoking	%	Cigarette smoking	%	Shisha smoking	%
12-14 years	428	92.8	33	7.2	0	0
15-17 years	458	83.7	69	12.5	21	3.8
18 years and more	189	78.8	51	21.3	7	2.9
Total (1258 students)	1075	No smoking	153	Cigarette smoking	30	Shisha smoking

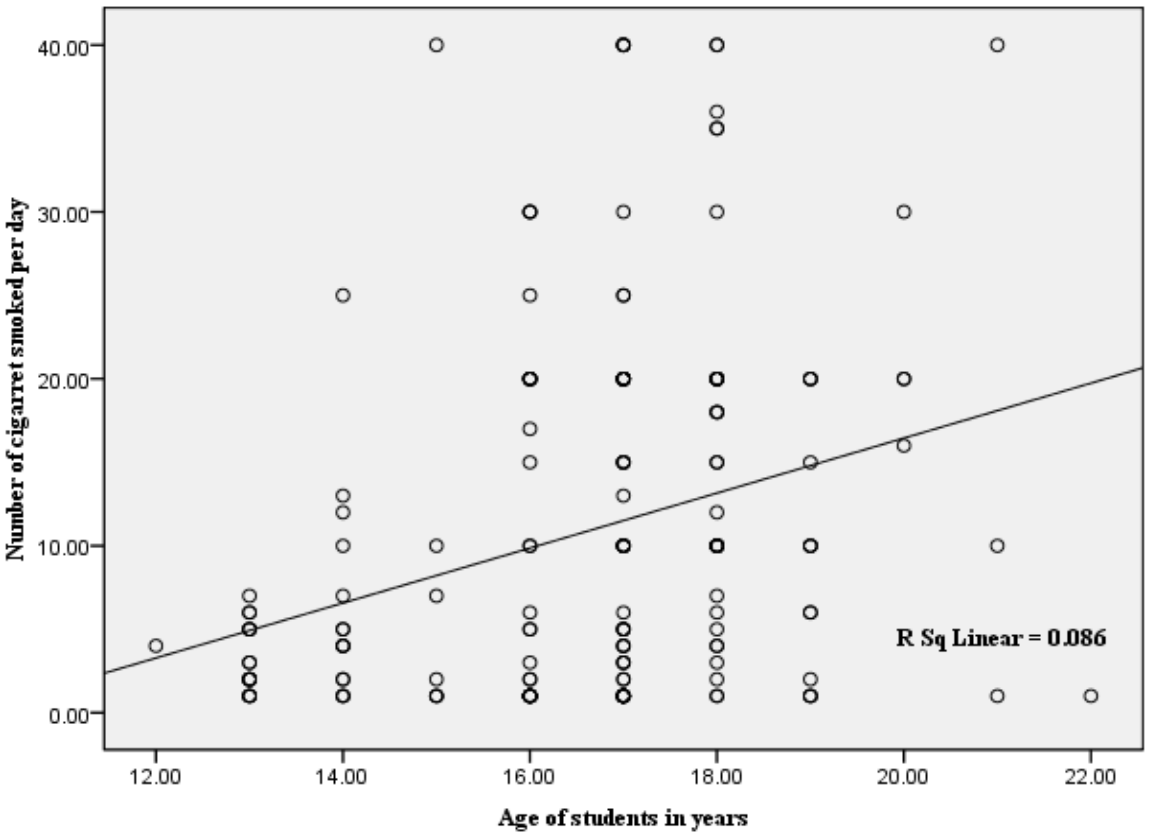

Figure No.1 Correlation between age of student and number of cigarette smoking per day

Table 5 The prevalence of various signs and symptoms associated with smoking among students in relation to type of smoking.

Feeling of some signs and symptoms during smoking	Type of smoking			
	Cigarette smoker	%	Shisha smoker	%
None	7	4.7	2	6.7
Dry cough	13	8.5	11	36.6
Wet cough	46	30.1	6	20
Dyspnoea	27	17.6	3	10
Lethargy and apathy	10	6.5	3	10
Increase incidence of flue and bronchitis	1	0.6	0	0
More than one symptom	40	26.1	3	10
No answer	9	5.9	2	6.7
Total (183 students)	153	100% Cigarette smoking	30	100% Shisha smoking

Table 6 show the relation of dry cough according to mode of smoking among smokers.

Smoking	Dry cough				Total
	Not present	%	Present	%	
cigarette	13	8.5	140	91.5	153
Shisha	11	36.7	19	63.3	30
Total	24	13.1	159	86.9	183

Chi-Square (χ^2) = 17.47, P. value < 0.001, d.f.= 1

Discussion: As in most Middle East countries, tobacco use in Iraq takes the form of cigarettes and shisha [18]. Al Musawy reported that in Iraq, scientific resources documenting substance use have been scarce and limited information and studies were found. The reasons are mostly related to the low financial and manpower resources allocated for research. The few available published studies were about smoking. Surveys conducted in Iraq between 1990 and 2009 showed that smoking prevalence ranged between 5% and 47% among males and between 1% and 10% among females [19]. This study showed that the prevalence of smoking habit among students was 12.3% which is more than results obtained by the school-based Global Youth Tobacco Survey (GYTS) in Baghdad in 2008, of students aged 13--15 years, were 3.2% currently smoked cigarettes, and 6.3% currently smoked shisha [6,7]. This may give an indicator of rising smoking habits among school student due to unstable situation and stressful life which the adolescent facing in Iraq during this period. The present study finding was less than which reported by other Arab countries (Egypt, Syria), the states of the Gulf Cooperation Council, Turkey and Greece were 50% of students aged 14 to 18 years smoked, [10,13,20]. The reasons behind that, due to the differences between nations, places, socio-psychological factors, political and economic stability, advertising, and norms. While Iraqi family health survey (IFHS) [18] which revealed that 14.8% of the household (adolescences and adults) members in Iraq currently smoke and a further 3.4% have smoked at some point in the past. This difference may be due to the difference in design, size of study population, and the eligible person.

Higher class level show the highest prevalence of smoking (5th secondary class students 17.8%) which goes with the finding of other researchers from Kurdistan/Iraq and Turkey [9, 21] that reported the effect of

long duration of friendship with other smoker may lead nonsmoker to try smoking, this is due to effect of peer pressure of smoking or psychological disorders which developed during adolescence. In the other hand school with a broader school environment showed a higher student perception of smoking prevalence, Al- Maaref secondary school showed 18.2% cigarette and 12.1% shisha smokers (the school has surface area ≥ 2500m^2) among other schools which goes with result of other researcher [4]. They reported that smoking perception increasing among students with broader school environment. This may be due to the fact that the broader school environments have much free space to smoking out of school control. The prevalence of cigarette and shisha smoking (21.3%, 3.8% respectively) increased with increasing of age of pupils due to the effect of age, puberty, psychosocial factors and have more chance to try smoking from friends which goes with other findings of Global youth tobacco surveillance, report about tobacco use among students aged 13-15 years-Baghdad, Iraq, 2008, and study done about cigarette smoking among in-school adolescents in the Kurdistan region of Iraq [6,7,9] which indicated increasing the prevalence of smoking with age. There was no correlation between age of student and the number of cigarettes smoked per day (R^2= 0.08, P.value > 0.05), this indicate other factors than age which are behind the severity of smoking such as psychosocial status, emotional, financial and country stability which agree with other finding [5,22,23,24,25]. The wet cough and more than one symptom had the highest prevalence among students with cigarette smoking 30.1%, 26.1% respectively, while dry cough among students with shisha smoking was 36.6%, this difference was statistically highly significant (P.value < 0.001). This indicates the hazardous effect of both cigarette and shisha smoking on health of students. The presence of dry cough indicates that shisha smoking may have more hazardous irritant effect on respiratory system due to evidence that cession of shisha smoking taken more time, more severe and the smoker inhaled other smoke and gases results from coke burning and need more powerful inspiration to inhale shisha than cigarette smoking. In other hand the difference was not significant for other signs and symptoms due to the fact that most of the students were newly started to try shisha smoking and this signs and symptoms may need long duration of exposure to shisha smoking to be developed in comparison to cigarette smoking. This agree with finding of literatures [13,14,15,16] which reported the hazardous effect of smoking in developing of various respiratory symptoms among smokers.

Conclusion: the age, school grade of pupils and broader school environment play the major rule in the increasing the prevalence of smoking among students, both cigarette and shisha smoking had hazardous effect on pupils health.

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