

# Youth Health Risk Behavior Assessment among University Students in Baghdad, Iraq

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## Abstract

**Introduction:** Health risk behavior is one of the leading causes of morbidity and mortality in the world. The social and economic costs associated with these behaviors can be reduced by changes in individuals' behavior. Health-related behavior can either enhance or damage physical, psychological and social wellbeing. Human behavior is influenced by an individual's health consciousness.

**Objective** is to study health related behavior that includes dietary habits, physical activity, smoking and alcohol consumption, screen time and behavior related to unintentional injury among students attending public universities in Baghdad.

**Methods:** Study design is Cross Sectional Study; sampling method is multi-stage Cluster sampling. Self-administered questionnaire was used to collect student data, a total of 1836 students participated in the study

**Results:** Among the 1836 students who participated in the study, 21.4% are smokers, only 3.4% use seatbelts while driving, 11% took medicine without prescription and 78% did not perform regular exercise. 85% of students use the internet at least three hours per day. Dietary habits of students were average based on diet recommendation.

**Conclusion:** Health related behavior traits were average among university students in Baghdad. Policy changes to reinforce stringent road traffic safety measures and initiate regular health promotion programs in universities to motivate students to be more proactive towards their health and fitness.

**Keywords:** Youth, Iraq, Smoking, health related-behavior, Internet Use, Physical Activity, Unintentional injury, Dietary habits

## 1. Introduction

Health risk behavior is one of the leading causes of morbidity and mortality in the world (Jepson et al., 2010). These behaviors are often established during childhood and adolescent years. Health-related behavior has gained wide attention in public health; improving health-related behavior is the ultimate goal of public health activities. Health related behavioral are related to all twelve leading causes of death in the world. The social and economic costs associated with these behaviors can all be reduced by changes in individuals' behavior (WHO, 2009). Health-related behavior by definition is any overt behavior that can either enhance or damage physical, psychological and social wellbeing at present and into the future even when genetics or environment are a negative factor (Hassen & Kibret, 2016). University is a critical time where students are prone to engage in risky behavior that negatively affects their health and well-being, such as physical inactivity, poor dietary habits and stress (Almutairi et al., 2018). health risk behavior includes the following: Behavior contributing to unintentional injuries, Sexual behaviors related to unintended pregnancy and sexually transmitted infections, including HIV infection, Alcohol consumption, Smoking, poor dietary habits, Physical inactivity.

## 2. Methodology

Study design is a cross sectional study, data Collection Started in October 2018 and concluded in May 2019. Sampling method is multi-stage Cluster sampling. The sampling frame is three Public Universities in Baghdad that are Baghdad University, Al-Mustansiriyah University and Al-Iraqia University. Both scientific and humanitarian colleges were included. Self-administered questionnaire was distributed to all students in the selected colleges.

The Questionnaire were adopted from the Youth Risk Behavior Surveillance System 2017 (YRBSS,2017), Centre for Disease Control and Prevention. The Questionnaire was translated into Arabic language and modified to suit our local culture. The Questionnaire covered the following domain; Current and previous smoking, Current Alcohol consumption, Safety precautions while driving or riding in a vehicle, eating habits and physical activity. The questionnaire also included weight and height to calculate body mass index.

### 3. Results

Total number of respondents who participated in the study is 1836 including 908 from humanitarian colleges and 928 from Scientific colleges. The students who participated in this study included 1145 (62.4%) male students and 691 (37.6%) female students. Among all students who participated in the study 21.4% are smokers, only 3.4% use seatbelts while driving, 11% took medicine without prescription and 78% did not perform regular exercise. 85% of students use the internet at least three hours per day. However male students spent more time on the internet compared to females. Male students were more physically active than females. Table (1) shows demographic characteristics of study participants.

Table 1. Shows demographic characteristics of study, N=1836

		N=1836	
		No	%
Age	Mean±SD (Range)	21.3±1.5 (18-25)	
Gender	Male	1145	62.4
	Female	691	37.6
Type of college	Humanity	908	49.5
	Scientific	928	50.5
BMI (Kg/m2) grade	Thin (<18.5)	17	0.9
	Normal (18.5-24.9)	927	50.5
	Overweight (25-29.9)	805	43.8
	Obese (≥30)	87	4.7
	Mean±SD (Range)	25.2±3.3 (15.1-37.3)	
	Height (CM)	169.3±9.2 (150-193)	
Weight (kg)		71.9±9.6 (47-120)	

Table (2) shows variation of health-related behavior by gender.

Table 2. Variation of health-related behavior by gender

Variables	Male (N=1145)	Female (N=691)	P value
Wearing seatbelt	30 (2.6 %)	33(4.8%)	0.045**
Riding in a car driven after drinking	38 (3%)	8 (1.8%)	0.004**
Using Phone while driving	4 (0.3%)	-	0.127
Smoking	336 (29.3%)	56 (8 %)	0.0001**
Alcohol	25 (2.2%)	3 (0.4%)	0.0004**
Know how to prevent STD*	1125 (98.3%)	615 (89%)	0.0001**
Had suicidal thoughts	15 (1.3%)	4(0.6%)	0.134
Taking medicine without prescription	114(10%)	93(13.5)	0.022**
Internet use per day (two or more hours)	1023(89%)	593(86%)	0.032**
Television viewing (one or more hours per day)	172(15%)	114(16.5%)	0.636
Physical activity	107(9.3 %)	38(5.5%)	0.0001**

\*STD Sexually transmitted Disease.

\*\* Significant difference between proportion using Pearson Chi-Square test at 0.05.

To measure the overall score of health-related behavior among students in this study for each of the six domains, Likert scale was used. The scale was created as the sum or average of questionnaire responses over each domain. Two methods were employed to set the levels for Likert scale: the first one by referring to the standard recommendations as guidelines to set the score for physical activity and dietary habits. The second method is by referring to previous studies in Iraq and other countries (Asia, Middle East, Europe and America) and comparing the rate among students in those studies and taking the average rate as middle point and setting the score around it. Table (3) the overall score of health-related behavior of students in each domain and the total score combining all domains. The overall score of student's health related behavior in this study is three which represents average (moderate) overall behavior.

Table 3. The overall score of health-related behavior of students, 1 represents very poor behavior and 5 represents very good behavior

Health Related Behavior	Score in numbers (from 1 to 5)	Score from 1 (very poor behavior) to 5 (very good behavior)
Behavior related to unintentional injury	4	Good
Smoking	3	Average (moderate)
Alcohol consumption and taking medicine without prescription	3	Good
Dietary habits	2	Poor
Physical activity and screen time	1	Very Poor
Cosmetic procedure	5	Very Good
Overweight and obesity	3	Average (moderate)
Total score of student's health related behavior	3	Average (moderate)

#### 4. Discussion

The aim of the study is to study the prevalence of health-related behavior among students aged 18-25 years old attending public Universities in Baghdad. The study also describes disparities in health-related behavior by gender. Understanding these variations in health-related behavior among groups, can help in design Community and University programs and implement effective interventions among students. Since individual behavior has a direct impact on one's health and wellbeing, improving health-related behavior has always been the goal of public health programs and Universities are ideal settings to implement these programs.

Behavior related to health has been linked to six main domains; dietary habits, smoking, alcohol consumption, behavior leading to unintentional injury, sexual behavior related to unintended pregnancy and sexually transmitted disease, physical activity and screen time. Unintentional injury remains the leading cause of death among youth worldwide (YRBSS, 2017). One of the leading causes was motor vehicle accident caused by alcohol consumption. Cardiovascular disease and cancer are the leading cause of death among adults (WHO, 2018). Cardiovascular disease is associated with smoking, sedentary lifestyle and consuming high fat diet. Smoking has been associated with lung cancer, chronic obstructive pulmonary disease and atherosclerosis (Gentzke, 2019). Sexual behavior related to unintended pregnancy has led to illegal abortion, contracting sexually transmitted disease including Human Immune deficiency Virus. Behavior is influenced by individual awareness and willingness to do the right thing. Genetics and environmental factors play a role in one's health and wellbeing, but behavior has the upper hand. Motor vehicle accident caused by drunk driving is still the leading cause of death among teenagers in the United States of America (Gentzke, 2019). Everyone should wear seatbelt while driving or riding in a vehicle and nobody should text or make a phone call while he is driving. It is recommended that everyone should use seatbelt while driving but teenagers and young adults are the least to use seatbelts while driving (Yellman et al., 2019).

Recommendation by the World Health Organization to reduce consumption of red meat, there has been a steady decline in red meat industry since 1970s (American Institute for Cancer Research, 2020). Red meat, especially processed meat has been linked to type two diabetes, cardiovascular disease, colon cancer and premature death. This study included 1836 students attending public universities in Baghdad. Results shows that student have

average eating habits based on standard dietary recommendation, this is consistent with findings of other studies (Khan et al., 2017; Merlo et al., 2020; Musaiger et al., 2014; Vibhute et al., 2018; YRBSS, 2017). Smoking rate among student in this study was 21.4%, mainly among male students this is consistent with findings of other studies (Delgado-Lobete et al., 2020; Granja et al., 2020; Mosaighar et al., 201; YRBSS, 2017). Alcohol consumption was only 1.5% among students in this study mainly among males, consistent with findings of (Musaiger et al., 2014) but contrast with findings in western countries that reported high rates of alcohol consumption among their students (Delgado-Lobete et al., 2020; Granja et al., 2020; Wu et al., 2019; YRBSS, 2017). The rate of taking medication without prescription was 11.3% among students in this study. More female than male reported taking medication without prescription. However, the rate was still lower than studies in western countries (YRBSS, 2017; Adlaf, Mitchell-Dick, & Kuo, 2016). Behavior related to unintentional injury included questions on seatbelt use, driving while drunk and using phone while driving. Although majority of student reported not using their phone while driving and not driving after taking alcohol. Seatbelt use among students was disappointing. Only 3.4% of students reported using seatbelt while driving or riding in a vehicle. In contrast to other studies that reported 60% use of seatbelt among students (Yang et al., 2020; YRBSS, 2017). None of the students in this study reported having been assaulted on campus. Majority of students 94% reported knowing how to prevent sexually transmitted disease. Only 4% of students in this study reported having suicidal thoughts. Behavior related to physical activity and screen time shows that 81% of students did not have any form of exercise. This is disappointing compared to other studies (Kim & Lee, 2022) when students were still at school, they had weekly physical activity session as part of their curriculum. As for screen time, although majority of students did not watch television, 88% of students used the internet at least three hours per day; this is consistent with findings of other studies (Tong et al., 2019; YRBSS, 2017).

#### 4.1 Limitation

The findings in this study are subject to at least four limitations. First, these data apply only to youth who attended college and therefore cannot be representative of all persons in this age group. Second, the extent of over-reporting and under-reporting of health-related behaviors cannot be determined. Third, body mass index is calculated based of self-reported weight and height and therefore tends to under-estimate the prevalence of overweight and obesity. Fourth, data analysis is based on cross-sectional survey and can only provide indication of association but not causality.

### 5. Conclusion

The study concludes that students attending Universities in Baghdad display moderate health-related behavior. Health-related Behavior related to unintended injury was below recommendation. Internet use was similar to that in other countries, as was smoking, but alcohol consumption does not appear to be a problem among students in Baghdad unlike students in other parts of the world. These data can be used to raise awareness about the prevalence of important health-related behavior among students in Baghdad and can be used for planning, implementing and evaluating public health programs among Iraqi youths. Universities are ideal settings for implementing health promotion programs. Therefore, planning and implementing programs to motivate students to be more responsible for their own health, eat healthy food and be more physically active, in addition reinforce stringent road traffic safety measures.

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#### Informed Consent

Obtained.

#### Provenance and Peer Review

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#### Data Availability Statement

The data that support the findings of this study are available on request.

#### Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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