Assessment of the Health Risk Behavior in Young Adulthood: A school-based Health Study in Kirkuk City / Iraq

HAYMAN M. SAEED

Abstract

Background: Many adolescents' health problems are predominantly caused by risky behaviors which contribute to the morbidity and mortality in this age group. The adverse health consequences of these behaviors have been recognized as important public health issues.

Objective: The aim of this study was to assess the rates of some health risk behaviors among male students of four secondary schools in Kirkuk city and to find out association of factors with those risk behaviors.

Methods: We designed a cross-sectional study. A self-administer questionnaire to collect the data from students of four secondary schools from Januarys 10th, 2016 to July 10th, 2016. 278 students were chosen randomly out of 1000 males' secondary school students.

Results: Violation of safety behaviors were the most commonly found in our study: 52.5% of the students were in a vehicle driven by alcohol drinking person, almost half of them never wore a helmet (51.1%) followed by a habit of texting message while driving (48.9%). Feeling sad and hopelessness were recognized in 40.6% of our study population followed by cigarette smoking (29.1%), physical fighting (24.5%), violence (15.8%) and alcohol drinking (7.6%) respectively. The least common risk behavior is drug abuse (0.4%). There was a significant association between age and alcohol drinking, safety and tobacco, also a positive association between weapon carrying and physical fighting with various indicators of substance use.

Conclusion: The highest health risk behavior among all male students in secondary schools in Kirkuk City was safety. This study suggests that prevention efforts aimed at high-risk youth during early adolescence need such a multi-problem focus, because this co-occurrence of problem behaviors is already evident among junior high school students.

Keywords: Smoking, Drug abuse, Alcohol Drinking, Fighting.

Introduction

Health risk behaviors such as smoking, alcohol abuse, unhealthy dietary patterns, sedentary lifestyle, unsafe and aggressive behaviors have been found to have an important influence on morbidity and mortality. These behaviors not only influence individuals' health but also create burdens for the nation and society as a whole. It is well documented that behaviors developed during childhood influence health in adolescence and adulthood. Furthermore, one longitudinal study reported that behaviors of seventh graders, the beginning of the teenage years, are confusing for many adolescents—and for parents trying to understand their behavior, including physical activity, food preference behaviors, smoking, and consolidated early. Thus, helping children to establish healthy lifestyles and avoid developing health risk behaviors is crucial and should start before these behaviors are firmly established. In other words, because children's behaviors have long-term effects on later life, it is important to monitor the development of children's health risk behaviors earlier, in order to design health promotion programs for children [1, 22, and 23]. In the past, many researchers have asserted that adolescent health is critical because this period is a transitional phase, with numerous external

factors affecting individual health from puberty to early adulthood [2, 3]. The educational system would seem to be an antidote for poor or unstable home environments. Schools generally are thought of as places where children are universally cared for, supported, and nurtured. However, researchers have identified a number of factors in the school that may contribute to youth antisocial and violent behavior. Flannery (1997) listed several school-related risk factors that include: high student/teacher ratios, insufficient curricular and course relevance, and weak, inconsistent adult leadership. Additionally, inappropriate social behaviors may be learned or reinforced at school while appropriate behaviors are ignored. For example, when teachers or school personnel take a "hands-off" approach and ignore such infractions as name-calling, fighting, and harassment, they inadvertently condone such behaviors [4]. This promotes a cycle that leads to increasing aggression in which lack of adult intervention allows the students to retaliate against aggressive peers with more aggression and violence. In effect, teachers who ignore students' harassment of other students send a message that students are on their own to solve their interpersonal safety issues [4]. Although behavioral factors contribute heavily to adolescent morbidity and mortality, only a few studies have reported on the prevalence of these behaviors in younger adolescents. Most of these studies have involved predominately white samples or have been limited to adolescents within a single grade level. Yet, behavioral patterns among subsets of the adolescent population clearly have important implications for primary health care providers who are seeing adolescents. Most adolescents see a physician at least once a year. These physician visits may be important sources of information and motivation for the adolescent. Although adolescents receive health information from various sources, they report relying mostly on the health information provided to them by parents and physicians. The physician is an important source of information on sensitive topics such as sexuality especially [6].

In addition, adolescents shape their own behavioral lifestyles at a young age, and those behavioral patterns can influence their lifelong health. Given the importance of adolescent health, understanding adolescent health behaviors and related factors are the initial step in improving lifelong health, as well as in determining which adolescent health behaviors require interventions.

The aim of the study was to find out the prevalence of risk behavior in adolescence and young adulthood, determine the relationships between health risk behaviors and their demographic characteristics of participants (age, education level, and socioeconomic status), and finally to assess the relationship between some risk health behaviors and different variables. To our best knowledge, there is no previous published study on health risk behaviors among students of secondary schools in Kirkuk city, no enough data about prevalence of unhealthy behaviors among students in Kirkuk city and there is a limited data set in this particular field. The present study was designed to determine health risk behaviors in terms of alcohol use, drug abuse, physical fighting, and cigarette smoking and associated variables of these risk behaviors

among male students of secondary school in Kirkuk City.

Subjects and Methods

This cross-sectional study was conducted in 4 male secondary schools in Kirkuk city. The data were collected during the period of Januarys 10th, 2016 to July 10th, 2016, and 278 students were chosen randomly out of 1000 male secondary school students. The schools were chosen according to the municipality geographical distributions of Kirkuk city, which is classified into two municipality areas, and then, two schools from each municipality were randomly selected using stratified sampling. The sample size was calculated using the level of significance 95%, 5% degree of precision, and population size was 1000 of male secondary school students in grade 4th, 5th, and 6th) [7]. The sample selection of student's number for each school was conducted according to following formula:-

Student sample = No. of student in specified school× sample size / Total Number of students of selected schools.

The sample distribution of the two municipalities in Kirkuk city, in each municipality we selected two secondary schools randomly; Al Hikma secondary school in Alma's area, Mar Afram and Wathba secondary school in Arafa area, in Al Qadissea area we selected Mustaqbal and Shabab secondary school.

A standardized questionnaire [8] was constructed for the purpose of the study. The questionnaire consists of 10 parts which include; Socio-demographic information data, safety, violence-related behaviors, bullying, tobacco use and electronic vapor product, drug use and drinking alcohol, body weight, and food ate or drank, physical activity, other health topics. The data were collected from students through using self-administration technique questionnaire. Students at grades 10, 11 and 12 were only included in the study. The data were collected in school halls and the students were provided with full explanation about the title, objectives and importance of the study. They were informed about how to fill in the questionnaire, and then they were advised to select the answer according to the real behavior.

The orientation of the students took about 15 minutes after the questionnaire forms had been distributed to them. The students were observed during answering the questionnaire was filled by students in the classroom in both languages (Arabic and Kurdish). Ethical consideration was a main principle of data collection. Permission has been taken from the Research Ethics Committee at the College of Al Qalam; Permission to conduct this study was secured from the General Directorate of Education in Kirkuk. Data were analyzed using Statistical Package for the Social Sciences software (SPSS, version 18). Categorical variables were described through frequencies and percentages. The data were analyzed through the application of Chi-square test (X2) to determine the significance association between socio-demographic data and fisher’s exact test for low value.

Results

A. Socio-demographic background

A total of 278 boys were recruited into the study. The age range was 16-18 years, Larger number of the students were in grade 4(117) followed by 6th grade (97). Height range of 130-191 centimeter (mean: 166 cm) 6.27. Most of the students had normal weight with a range of 60-100 kilogram …

B. Health risk behaviors

The present study is one of the few studies that assess the health risk behaviors among secondary school students in Kirkuk city /Iraq.

1- Safety disciplines

Almost two third (67.3%) of the study subjects had ridden a bicycle over the past 12 months prior to the study, 59% of them had never or rarely worn a bicycle helmet. Additionally, more than half of the study population never use a seat belt while riding a car driven by someone else (Never or Rarely 51.4%). Texting while driving was seen in 9.4% of the study sample, in the same time more than half of respondents (51.1%) did not drive a car or other vehicle during the past 30 days. Almost one third of the study population had driven a car or vehicle for at least one time while drinking alcohol (30.6%). A small number of the respondents (6.5%) rode a car for 2-4 times while the driver had alcohol prior to drive.

2-Violent behaviors (weapon carrying and physical fighting)

Almost one-sixth (15.8%) of risk behaviors investigated in our study is conducted, carrying a weapon such as a gun or a knife outside school while a considerably smaller number (5.4%) of them carried weapons within school boundaries. About ten percent (9.4%) did not attend school, for at least one time, for feeling unsafe. Furthermore, 7.2% of them got threatened or injured with a weapon like a gun, knife, or club on school property by a colleague. Less than one third (27.4%) of the student were engaged in a physical fight for at least one time, while 8.3% of students were injured in a physical fight one or more times in a year and had to be treated by a doctor or a nurse. Among the students that went out with someone, 16.9 % of them had been physically hurt by someone they were meeting for one or more times.

3- Depression and suicide attempts

Over the past 12 months; 12.2% of students were bullied on school property. Also, 14.4% of the students bullied through e-mail, chat rooms, instant messaging, websites one or more times. A large number of the students (40.6%) felt so sad or hopeless almost every day for two weeks or more in a row during the year that affected their activities. 10.4% of them seriously considered suicide and made a plan; moreover (5.2%) actually attempted suicide for one or more times.

4- Cigarette Smoking

Nearly one-third of students (29.1%) had tried cigarette smoking (even one puff) for the first time at the age of 10 years. The percentage of high school students who smoked cigarettes one or more over the past 30 days were 20.1%.

5- Alcohol drinking and drugs abuse

The percentage of high school students who had at least one drink of alcohol in one or more occasions during life was 7.6 %. The age of first time trying alcohol was 12 years. Regular drinking is very infrequent (5.8%). There was almost a negligible number of students who took medicine for psychological purposes (0.4%)

6- Weight

Almost one-third (31.8%) of student had described their underweight. While 17.2% were overweight, others (51%) which represented more than half had a normal weight (more than quarter of student's respondents to either tried to lose weight 26.6% or prefer staying on the same weight.

7- Dietary behavior manner

During the past 7 days more than one-third (34.2%) of students had a fruit juice. One third of the students had fresh fruits for 2-3 times weekly. Drinking fizzy beverage more often (78.4%) one or more time weekly. More than half (51.1%) of sample size drank milk one or more times per day; finally, 11.5% of the students did not eat breakfast at any one a week.

8- Physical Activity

The percentage of secondary students who participated in any type of physical activity that increases their heart rate and made them breathe hard for at least 60 minutes per day on five or more of the past seven days represent (21.1%), on an average school day, almost half (48.9%) of students attended physical education class daily in an average week. Sometimes (51.8%) students participated in at least one team or more, while this rate is higher for those who played video-computer games (58.2%) 2 hours or more per day. Students who watched television for 3 or more hours per day on an average school day was identified in 43.7 % of them.

9- Other health risk behaviors

Almost half (49.3%) of the students had not visited or not sure of visiting a dentist over the last year. 41.5 % had 8 hours or more of sleep on an average school day; only 3.6 % of adolescents had been informed of having asthma by a doctor or a nurse.

10- Scientific performance at school:

6.5% of them had a degree of 90 or more, 10.8% were taking degree of 80 to 89%, 70-79 was 29.4%, 32.7 was of degree 60-69%, 50-59 of degree 14.7%, less than 50% reported of 6.8%.

11- Correlation among study variables

The study shows that there was a significant relationship between age ($p<0.05$) and alcohol drinking, safety and tobacco using health risk behavior.

A statistically significant association ($p<0.05$) was found among class grade and fruits, eating X2 (0.043), alcohol (0.000), physical activity (0.008), safety (0.035), tobacco using (0.000). Significant relationship found between number of sleeping hours and Tobacco using 0.001 (df=5), seriously consider attempting suicide 0.031(df=4) Table (3).

Discussion

Adolescence is a critical life period in the perspective of health behavior. This life period is marked by the crystallization of the health related behaviors and their integration in the youth's lifestyle. In consequence, health related habit exercise immediately influenced youth development, and had a long term health benefit as well. In the developmental process youth experimentation is tried in certain health-

demanding behaviors through which behaviors have a functional benefit to follow adult lifestyle, but if they become regular routines, they can have a harmful effect on youth health. Empirical results revealed that the experience of health risk behaviors can be considered non adaptive but not maladaptive in adolescence.

The current study revealed that there was a significant association between drug abuse and age group, and there was no significant association between other health risk behaviors and age group. The current study was in agreement with a study from Erbil City [9], and Cyprus [10] that showed that there was a significant association between drug abuse and age. The result of the present study agrees with a study from Romania, about the prevalence of drug abuse which showed that there are significant increases in drug abuse and this may be returned to health risk caused by everyday life stress, developmental conflicts and non-functional life skills.

These findings were in contradict to the study by Barnot, (2005) [11]. Results of a subsequent stepwise regression revealed no significant ($p>0.05$) effect of tobacco use or binge drinking on QPA when additional covariates such as SAT score, high school class rank and number of missed classes were included in the analysis. Results of a simple linear regression found no significant relation ($p = 0.12$) between number of risk behaviors and QPA, and this results in health risk behaviors in our study may be because of culture and religion diversity.

Moreover, a significant relationship revealed ($p<0.05$) between weight and drug use (0.043), other health behaviors (0.025), physical (0.035), safety (0.002). Our findings supported by Yager and Odea (2014) that young men who were currently attempting weight loss or weight gain, and those currently consuming energy drinks ($\eta p2 = 0.01$, $p < 0.01$) and vitamin/mineral supplements ($\eta p2 = 0.01$, $p < 0.01$) were also significantly more supportive of doping in sport. However, those involved in weight lifting, and using protein powders were not ($p >0.05$) [12].

These results was in an agreement of a study of (McKnight-Eily et al., 2011). No significant relationship found between number of sleeping hours and Watching TV [11] in a day 0.62 (df=30), drink can or soda in 7 days 0.27 (30), 0.82 (df=35), playing video game or computer per a day 0.46 (df=35), physical fight 0.24 (df=20), drugs using 0.3 (df=5), drinking alcohol 0.69 (df=25).feeling sadness or hopeless 0.18 (df=5). These results were in disagreement of a study by McKnight-Eily et al.,(2011), but agreed with Watching TV in a day (0.79). [13]

There were also correlations between other health risk behaviors (e.g. among illicit drug use and violence (0.002) and delinquency-related behaviors or between illicit drug use, smoking and alcohol abuse (0.003), this type of interrelationship is also documented by studies from other countries. [14, 15, 16, 17, 18]

Our study showed a significant relationship between physical variables (alcohol drinking, driving vehicle or car and drinking alcohol) and carrying a weapon with other variables (Make a plan about how would attempt suicide, tobacco smoking, use tobacco dip cigarillos, drinking alcohol and

drug abuse) Table (3). Our findings of a positive association between weapon carrying and physical fight with various indicators of substance use consistent with previous research conducted in several countries, including the United States, Japan and Korea [19, 20, 14, 21]. Compared with physical fights, weapon carrying in our study not only tended to be associated with a larger number of problem behaviors, but the effect measures were overall much stronger, supporting the contention of 'clustering' of risk behaviors in the same individual.

Conclusions

A clearer understanding of why individuals perform health behaviors might assist in the development of interventions to help individuals gain health benefits. A variety of factors have been found to account for individual differences in the performance of health behaviors. Demographic variables show reliable associations with the performance of health behaviors. For example, there is a curvilinear relationship between many health behaviors and age, with high incidences of many health risking behaviors such as smoking in young adults and much lower incidences in children and older adults, such behaviors vary also by gender, that why the research attempted to research for the same purpose, that effect as a factor on physical activity, diet, and academic achievement in school may be a good indicator of students who are at risk of engaging in unhealthy or dangerous behaviors and in need of support or intervention. Conversely, prevention strategies aimed at risk behaviors may enhance student academic achievement.

Our results showed the importance of identifying high-risk youth and targeting them with comprehensive prevention programs. Creative ways of reaching high-risk youth need to be considered, both regarding the types of messages offered and settings for health promotion intervention programs. Furthermore, this study suggests that prevention efforts aimed at high-risk youth during the early adolescence need such a multi-problem focus, because this co-occurrence of problem behaviors is already evident among junior high school students. Health risk behaviors proved to be strictly related with each other, which emphasizes the need for health promotion programs to intervene in several different risk behaviors simultaneously.

There are limitations to this study. The analysis was based on self-reported behaviors. The questionnaire was distributed in school and may not have included some of the most high-risk teens.

References

1. McGinnis JM, Foege WH: Actual causes of death in the United States. *JAMA*. 1993, 270: 2207-2212. 10.1001/jama.270.18.2207.View ArticlePubMedGoogle Scholar http://www.ncbi.nlm.nih.gov/pubmed/
2. Neilson, L. (1991). Adolescence: a contemporary view. Fort Worth, TX: Harcort Brace College Publishers.
3. Singer, J. (1984). The human personality. New York: Harcourt Brace Jovanovich publishers.
4. Flannery, D.J. (1997). School violence: Risk, preventive intervention, and policy. Urban Diversity

Series No. 109. New York: Teachers College, ERIC Clearinghouse on Urban Education. (ED 416 272) http://ericweb.tc.columbia.edu/monographs/uds109.html

5. Furlong, M., & Morrison, G. (2000). The School in School Violence. Journal of Emotional and Behavioral Disorders, 8, 71-82.
6. Millstein S G, ; Irwin C E, Adler N E, Cohn L D; Kegeles S M; and Dolcini M M (1992). Health-Risk Behaviors and Health Concerns among Young Adolescents, Pediatrics.3;422. Araoye M, Research methodology with statistics for health and social science, E. Nathadex Publisher Irion 2003; 118-9.
7. CDC (2015). YRBSS – Questionnaire and items Rationales – Adolescent and school Health. Available at: http://www.cdc.gov/healthyyouth/yrbs/questionnaire_rationale.html
8. Al-Doski Nazar Ali shreen and Baker Jawdat Mamand ALhag (2015): Health risk behaviors among male students in secondary schools in Erbil city, Zanco J.Med. Sci., 20 ;(1):1202-1205.
9. Christophi z, Savvides E, Warren C., Demokritou P, Connolly G. (2006) Main determinants of cigarette smoking in youth based on the 2006. Prev Med; 48(3), 232- 6.18.
10. Barnot Vickilyn (2005): Association of health risk behaviors and academic achievement among college freshmen, Phd thesis, 118 pages.
11. Yager Zali and O dea Jennifer , Relationships between body image, nutritional supplement use, and attitudes towards doping in sport among adolescent boys: implications for prevention programs, Int Soc Sports Nutr. 2014; 11: 3. Available at:- http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3986904/
12. McKnight-Eily Lela R., Danice K. Eaton b, Richard Lowry b, Janet B. Croft a,Letitia Presley-Cantrell a, Geraldine S. Perry (2011): Relationships between hours of sleep and health-risk behaviors in US adolescent students Prev. Med ,YPMED-3121;3;4C.
13. Takakura M, Nagayama T, Sakihara S, Willcox C (2001) Patterns of health-risk behavior among Japanese high school students. J Sch Health 71:23–29
14. Everett SA, Malarcher AM, Sharp DJ, Husten CG, Giovino GA (2000) Relationship between cigarette, smokeless tobacco, and cigar use, and other health risk behaviors among U.S. high school students. J Sch Health 70:234-240.
15. Anteghini M, Fonseca H, Ireland M, Blum RW (2001) Health risk behaviors and associated risk and protective factors among Brazilian adolescents in Santos, Brazil. J Adolesc Health 28:295–302.
16. Shrier LA, Emans J, Woods ER, DuRant RH. The association of sexual risk behaviors and problem drug behaviors in high school students. J Adolesc Health.1997;20:377–383.
17. Cooper ML (2002) Alcohol use and risky sexual behavior among college students and youth: evaluating the evidence. J Stud Alcohol Suppl 14:101-117.
18. Guilamo-Ramos V, Litardo HA, Jaccard J. Prevention programs for reducing adolescent problem behaviors: implications of the co-occurrence of problem behaviors in adolescence. J Adolesc Health 2005; 36:82–6.
19. Halliday-Boykins CA, Graham S. At both ends of the gun: testing the relationship between community violence exposure and youth violent behavior. J Abnorm Child Psychol 2001; 29:383–402.
20. Sibai Tarek, Rania A. Tohme2, Hind A. Beydoun3, Nabil Kanaan4, Abla Mehio Sibai2 (2008). violent behavior among adolescents in post-war Lebanon: the role of personal factors and correlation with other problem behaviors. JPH.31 :(1); 39-46.

21. Mokdad AH, Marks JS, Stroup DF, Gerberding JL: (2004) Actual causes of death in the United States, 2000. *JAMA*., 291: 1238-1245. 10.1001/jama.291.10.1238.

22. The burden of chronic diseases and their risk factors: (2004) national and state perspectives. Centers for Disease Control and Prevention.

Table 1: Socio-demographic characteristic of adolescents aged 16-18 years old.

Age	Frequency	%
16.00	88	31.7
17.00	73	26.3
18.00	117	42.1
Total	278	100
Class		
Fourth	117	42.1
Fifth	64	23.0
Sixth	97	34.9
Total	278	100.0
Height		
131-140	3	1.1
141-150	7	2.5
151-160	33	11.9
161-170	118	42.4
171-180	101	36.3
181-190	16	5.8
Total	278	100.0
Weight		
50-55	47	16.9
56-60	21	7.6
61-65	25	9.0
66-70	111	39.9
71-75	30	10.8
76-80	18	6.5
81-85	10	3.6
86-90	8	2.9
91-95	2	0.7
96-100	6	2.2
Total	278	100.0

Table 2: Association of socio-demographical characteristics and Health Risk Behaviors among secondary school students.

Variables	Alcohol	Bullying	Drugs	Fruits	Others	Physical	Safety	Violence	Tobacco

Age	X_2	1295.5	23.96	26.32	52.28	33.177	33.93	68.45	34.487	715.935
	df	35	25	30	40	30	40	40	25	40
	Sig.	0.000	0.522	0.659	0.092	0.315	0.739	0.003	0.098	0.000
Class	X_2	168.33	3.793	9.108	26.83	19.057	32.808	27.59	5.058	112.179
	df	14	10	12	16	12	16	16	10	16
	Sig.	0.000	0.956	0.694	0.043	0.087	0.008	0.035	0.887	0.000
High	X_2	32.579	21.830	29.11	36.48	11.453	27.989	51.77	13.985	42.643
	df	35	25	30	40	30	40	40	25	40
	Sig.	0.586	0.646	0.512	0.630	0.999	0.924	0.101	0.962	0.358
Weight	X_2	58.584	59.197	73.11	68.95	76.106	95.213	110.5	53.98	70.148
	Df	63	45	54	72	54	72	72	45	72
	Sig.	0.63	0.076	0.043	0.580	0.025	0.035	0.002	0.169	0.54

Table 3: Relationship between Carrying weapon, Physical fight in month and some deferent variables

Various indicators of substance use		Degree of freedom	X2	Significant
Been in a vehicle driven by someone drinking alcohol	Carrying weapon	12	12.633	0.396
	Physical fight	16	11.057	0.806
Driving a vehicle and drinking alcohol	Carrying weapon	15	15.264	0.433
	Physical fight	20	33.726	0.028
Seriously consider attempting suicide	Carrying weapon	3	3.906	0.272
	Physical fight	4	3.808	0.433
Make a plan about how would attempt suicide	Carrying weapon	6	23.176	0.001
	Physical fight	8	15.119	0.057
Tobacco smoking	Carrying weapon	3	10.523	0.015
	Physical fight	4	7.492	0.112
Use tobacco dip cigarillos	Carrying weapon	15	31.280	0.008
	Physical fight	20	22.875	0.295
Alcohol drinking	Carrying weapon	15	29.431	0.014
	Physical fight	20	47.794	0.000
Drugs	Carrying weapon	3	14.497	0.002
	Physical fight	4	0.325	0.988