

TO DETERMINE THE SMOKING HABITS AND ITS EFFECT ON PHYSICAL ACTIVITY LEVELS IN ADOLESCENTS AND EARLY ADULTS AGED 18-23 YEARS IN KING KHALID UNIVERSITY, KHAMIS MUSHAYAT, SAUDI ARABIA

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**ABSTRACT**

**Background:** Smoking causes immediate and long-standing effects on exercise and physical activity. In addition to increasing the well-known risks for cancer, heart and respiratory diseases, smokers have less endurance and poor physical performance.

**Objectives:** To determine the smoking habits and its effect on physical activity levels in adolescents and early adults aged 18-23 years of King Khalid University Khamis Mushayat, KSA.

**Methodology:** Khamis Mushayat area near Abha city has been selected for the study. In this area, King Khalid University was selected as the population. One hundred and eighty seven female subjects 18 to 23 years from King Khalid University who smoked cigarettes and 187 females who were non smokers were selected for the study. GPAQ (Global physical activity questionnaire) was used for the survey to assess the level of physical activity (given in Appendix). Also data on height and weight were collected.

**Results:** With respect to body mass index of the smokers and non smokers, a significantly higher percent of the non smokers (57.5%) were of normal weight, while only 28.8% of smokers had normal weight. A majority of the smokers (45.9%) had the smoking habit for 2 years and less, whereas, 27.7% of the smokers smoked for 6 years or above. A significant majority of the smokers (63.2%) underwent physical activity only for 2 days and less, whereas the non smokers involved in physical activity for 6 days or more. Only a very small percent (8.1%) of the smokers exercised for 6 or more days in a week. Among non smokers, a minimum of 16.1% involved in physical activity, three to five days a week. All the participants in the study had mean years of smoking of 9.75 years. We found out that smokers relatively spent less time for physical activity and were more sedentary.

**Conclusion:** In the present study it's clear that the students going to University are moderate smokers but their physical activity level is decreased. They usually have trends towards less physical activity and less awareness regarding the ill effects of smoking.

## INTRODUCTION

Smoking causes immediate and long-standing effects on exercise and physical activity. In addition to increasing the well-known risks for cancer, heart and respiratory diseases, smokers have less endurance and poor physical performance. When person inhales tobacco smoke, carbon monoxide binds to red blood cells, displacing oxygen which prevents its delivery to the muscles and other body tissues. This causes an increase in lactic acid which decreases physical endurance, making it more difficult for people not only to do well in sports but also to do everyday things (1).

Smoking also constricts blood vessels, limiting blood flow to the muscles. Less blood and oxygen flow means that it's harder to build muscle and muscles become tired easily. The nicotine in tobacco narrows blood vessels and puts added strain on the heart, too. All of these factors affect physical health and athletic performance (2).

The decrease in oxygen caused by smoking causes smokers to have higher resting heart rates than non smokers, which means their hearts are always working harder to pump blood and oxygen to the body – even for everyday activities, like walking upstairs (3).

On an average, someone who smokes a pack or more of cigarettes each day lives 7 years less than someone who never smoked. The resting heart rates of young adult smokers are two to three beats per minute faster than nonsmokers (3).

Smoking at an early age increases the risk of lung cancer. Smoking at any age damages your lungs, but smoking during adolescence also stunts lung growth and can cause lung function to decline years earlier than nonsmokers. As a result, children and teens who smoke are less physically fit and have more breathing problems (4).

Smokers suffer from shortness of breath almost 3 times more often than nonsmokers (5). Smoking is related to chronic coughing, wheezing and asthma in children and teens (6).

Smoking disrupts bone growth and this is of great concern during adolescence when there is rapid bone growth. Also smokers are more susceptible to fractures because the chemicals in cigarette smoke limit the body's ability to form healthy, new bone tissue. Over a period of time this lessens bone density and causes bones to become weak and brittle (7).

Smokers tend to be less physically active than nonsmokers (8). While some people unwisely begin or continue to smoke as a weight control measure, research suggests that the links between smoking, less physical activity and decreased physical performance, actually hinder weight control (9).

People who quit smoking demonstrate improved exercise performance as compared to those who continue to smoke (10).

## METHODOLOGY

Khamis Mushayat area near Abha city has been selected for the study. In this area, King Khalid University was selected as the population. One hundred and eighty seven female subjects 18 to 23 years from King Khalid University who smoked cigarettes and 187 females who were non smokers were selected for the study. Ethical approval for this study was obtained from King Khalid University. Mentally impaired, hearing impaired, low level of understanding of the survey questions and bedridden or unconscious subjects were excluded from the study.

GPAQ (Global physical activity questionnaire) was used for the survey to assess the level of physical activity (given in Appendix). Also data on height and weight were collected. A questionnaire based survey was conducted with the approval of the participating students. The questionnaires were given to them and the responses were collected. The data collected was coded and uploaded on SPSS 20 to analyze the results.

## RESULTS

### Age of the selected subjects

**Table I – Mean age of the subjects**

Age	N	Mean	Std. Deviation
VAR00001	87	22.4483	1.56085
Valid N ( list wise )	87		

In the present study, the mean age of the selected subjects was 22 years.

### II. Anthropometric profile of the selected subjects

**Table II – Height of the subjects**

Cm	Frequency	Percentage
150-159	37	37 %
160-169	46	46%
170 or above	17	17%
Total	100	100%

A majority of the subjects (46 %) were in the height range of 160-169 cm. A minimum of 17% of the subjects fell in the range of 170cm or above.

**Table III a. Weight of smokers**

In kg	Frequency	Percentage
45-60	54	62 %
61-79	27	31.2%
80 or above	6	6.8%
Total	87	100%

**Table III b. Weight of non-smokers**

In kg	Frequency	Percentage
45-60	14	16.1

61-79	58	66.7
80 or above	15	17.2
Total	87	100%

Among the smokers, a majority of the subjects (62%) weighed 45-60 kg and only 6.8% weighed 80kg or above. Among non smokers, a majority of them weighed 61-79 kg and only 14% weighed 45-60kg.

**Table III c. Body mass index of the smokers and non smokers**

Body mass index	Smokers		Non smokers	
	Frequency	Percentage	Frequency	Percentage
< 16.5	2	2.3	0	0
18.5-24.9	25	28.8	50	57.5
25-29.9	22	25.3	12	13.8
30-34.9	23	26.5	12	13.8
35-39.9	10	11.5	10	11.5
40	5	5.8	3	3.5

With respect to body mass index of the smokers and non smokers, a significantly higher percent of the non smokers (57.5%) were of normal weight, while only 28.8% of smokers had normal weight.

### 3. Years of smoking of the subjects

**Table IV – Years of smoking of the subjects**

VAR3 (in years)	Frequency	Percentage
2 years and less	40	45.9 %
3-5	23	26.4%
6 or above	24	27.7%
Total	87	100%

A majority of the smokers (45.9%) had the smoking habit for 2 years and less, whereas, 27.7% of the smokers smoked for 6 years or above.

### 4. Days of vigorous activity of smokers and non smokers

**Table Va. – Days of vigorous activity of smokers**

VAR6 (days in week)	Frequency	Percentage
2 days and less	55	63.2 %
3-5	27	28.7%
6 or above	7	8.1%

Total	87	100%
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**Table V b. – Days of vigorous activity of non smokers**

<b>VAR6 (days in week)</b>	<b>Frequency</b>	<b>Percentage</b>
2 days and less	16	18.4 %
3-5	14	16.1%
6 or above	57	65.5%
Total	87	100%

A majority of the smokers (63.2%) underwent physical activity only for 2 days and less, whereas the non smokers involved in physical activity for 6 days or more. Only a very small percent (8.1%) of the smokers exercised for 6 or more days in a week. Among non smokers, a minimum of 16.1% involved in physical activity for three to five days a week.

## **DISCUSSION**

Smoking causes immediate and long - standing effects on exercise and physical activity. In addition to increasing the well-known risks for cancer, heart and respiratory diseases, smokers have less endurance, poorer physical performance and increased rates of injury and complications from physical activity (21)

In the present study, most of the smokers were young with the mean age of 22 years. All the participants in the study had mean years of smoking of 9.75 years. We found out that smokers relatively spent less time for physical activity and were more sedentary. The World Health Organization (WHO) currently estimates that each year smoking accounts for about 6 million deaths worldwide and causes about half a trillion dollars in economic damage annually.

## **CONCLUSION**

In the present study it's clear that the students going to University are moderate smokers but their physical activity level is decreased. They usually have trends towards less physical activity and less awareness regarding the ill effects of smoking.

**REFERENCES**

- The Health Consequences of Smoking: A Report of the Surgeon General, 2004  
[http://www.cdc.gov/tobacco/data\\_statistics/sgr/2004/index.htm](http://www.cdc.gov/tobacco/data_statistics/sgr/2004/index.htm). See also, HHS, Smokefree.gov, “Health Effects,” <http://smokefree.gov/healtheffects>, accessed April 23, 2017.
- The Health Consequences of Smoking: A Report of the Surgeon General, 2004  
[http://www.cdc.gov/tobacco/data\\_statistics/sgr/2004/index.htm](http://www.cdc.gov/tobacco/data_statistics/sgr/2004/index.htm). See also, HHS, Smokefree.gov, “Health Effects,” <http://smokefree.gov/healtheffects>, accessed April 23, 2017.
- The Health Consequences of Smoking: A Report of the Surgeon General, 2004  
[http://www.cdc.gov/tobacco/data\\_statistics/sgr/2004/index.htm](http://www.cdc.gov/tobacco/data_statistics/sgr/2004/index.htm). See also, HHS, Smokefree.gov, “Health Effects,” <http://smokefree.gov/healtheffects>, accessed April 23, 2017.
- Preventing tobacco use among youth and young adults: A report of the Surgeon General (2012).  
<http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use>. Accessed 23rd April 2017.
- CDC “Information sheet: Youth and tobacco”, [http://www.cdc.gov/tobacco/youth/information\\_sheet/](http://www.cdc.gov/tobacco/youth/information_sheet/), Accessed 17<sup>th</sup> April, 2017.
- Preventing tobacco use among youth and young adults: A report of the Surgeon General (2012).  
<http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use>. Accessed 23rd April 2017.
- The Health Consequences of Smoking: A Report of the Surgeon General, 2004  
[http://www.cdc.gov/tobacco/data\\_statistics/sgr/2004/index.htm](http://www.cdc.gov/tobacco/data_statistics/sgr/2004/index.htm). See also, HHS, Smokefree.gov, “Health Effects,” <http://smokefree.gov/healtheffects>, accessed April 23, 2017.
- Blair, S.N. et al.,(1985). “Relationship between exercise or physical activity and other health behaviors”, Public health reports, Vol.100, No.2, pp. 172-180.
- Tomeo, C.A., et al., (1999). “Weight concerns, weight control behavior and smoking initiation”, Paediatrics, Vol.104, No.4, pp. 918-924.
- Albrecht, A.E., et al., (1998) “Effect of smoking cessation on exercise performance in female smokers participating in exercise training”, American journal of cardiology, Vol.82, No.8, pp.950-55.
- Almutairi, K.M. (2015). “Predicting relationship of smoking behavior among male Saudi Arabian college students related to their religious practice”, Journal of religion and health.
- 11a) Economics of tobacco for the Middle East and North Africa (MNA) region. Regional report: Middle East and North Africa (MNA), May 18<sup>th</sup>, 2001.
- 11b) WHO (2010). World no tobacco day. Press release. Geneva: WHO.
- 11c) WHO (2009). Women and health: today’s evidence, tomorrow’s agenda, Geneva.

11d) J.M.Samet, Yoon, S.Y. (Eds), (2001). Women and the tobacco epidemic: challenges for the 21<sup>st</sup> century, WHO, Geneva.

Al-Nozha, M. et al., (2009). "Smoking in Saudi Arabia and its relation to coronary artery disease", Journal of the Saudi heart association, Vol.21, pp.169-76.

Klumbiene J., et al., (2000). "The relationship of childhood to adulthood pressure: Longitudinal study of juvenile hypertension in Lithuania, Journal of Hypertension, pp.18531-8.

Al Ghobain, M.O. et al., (2011). "Prevalence and characteristics of cigarette smoking among 16-18 years old boys and girls in Saudi Arabia", Annals of thoracic medicine, Vol. 6, No.3, pp.137-40.

Mandil, A., et al., (2010). "Smoking among university students: A gender analysis". Journal of infection and public health", Vol.3, No.4, pp.179-187.

Bassiouny, M. (2009) "Smoking in Saudi Arabia, Saudi Medical journal, Vol.30, No.7, pp.876-881.

George P. et al., (2012). Smoking and physical activity inter-relations in Health Science students. Is smoking associated with physical inactivity in young adults?". Hellenic journal of cardiology, Vol. 53, pp. 17-25.

Available online from <http://www.tobaccofreekids.org>. Accessed in May 2017.

) Knishkowy B. et al., (2005). "Smoking: an emerging health risk behavior". Pediatrics, Vol.116:e113-9.

Rodrigues ES, Cheik NC, Mayer AF., (2008) "Levels of physical activity and smoking in undergraduate students". Rev Saude Publications, Vol.42, No.4, pp.672-8.

CDC (1994). "Preventing Tobacco use Among Young People- A Report of the surgeon General".