

Assessment of lifestyle and eating habits among undergraduate students in Najran University, Najran, Saudi Arabia

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ABSTRACT

Background: Admission to the university is a new stage of life for students that are generally associated with independence, social activities, and changes in lifestyle and behavior including changes in nutritional habits. **Objectives:** The study objective was to investigate the lifestyle and major dietary risk factors associated with the development of overweight and obesity among Najran University students, Saudi Arabia. **Materials and Methods:** 300 undergraduate students attending Najran University completed a self-administered questionnaire on demographic, social, and cultural data, as well as information on eating habits, health and nutritional status. The questionnaire was labeled and coded by the researcher. The data obtained were subjected to analysis using Microsoft Office Excel 2007. **Results:** Analysis of the dietary habits of the students in the present sample revealed adoption of several undesired dietary habits. Two-thirds of them had between 1 and 2 weekly servings of fruit and vegetables, more than half choosing the less healthy food, fast food in particular, and about one-third only having a regular healthy breakfast on a daily basis. Almost two-thirds (62%) of the students have normal body mass index, almost 14.2% are underweight, 11% are overweight, and 12% are obese. 29% of the students engaged in regular exercise while another 25% stated that they never or hardly ever perform physical exercise. Most students, about 40% go to bed between 1 and 3 am, 47% sleep for <6 h/day, and more than 50% feel that they are not getting enough sleep although 24% always take a nap and 45% take a nap occasionally. Majority of the students did not smoke, with 17.2% of the students being regular smokers. These figures reflect the rather unhealthy dietary and lifestyle patterns of Najran University students in general. **Conclusion:** This study showed the difficulties that university students encounter, especially when they are away from the family, in following a healthy lifestyle and taking care of themselves from the nutritional point of view. The present data had shown relatively alarming prevalence of overweight/obesity, unhealthy dietary practices, and lifestyle behaviors that should be targeted and modified. This project provides valuable data that could be used by policymakers to address issues concerning students' health.

KEY WORDS: Lifestyle; Obesity; Physical Activity; Dietary Habits; Undergraduate Students

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INTRODUCTION

It has been argued that health is an important factor for academic achievement at school^[1,2] and in higher education.^[3] Consequently, in the context of universities or colleges, promoting the health and well-being of all members means promoting effective learning.^[4] University students

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represent a major segment of the young adult population.^[5] They typically enter a dynamic transitional period of new independence from their parents that is characterized by rapid, interrelated changes in the body, mind, and social relationships^[6] and experience a new environment that generally involves increased workload and stress, altered patterns of life, which are significant contributors to unhealthy lifestyles. Previous studies^[7-9] on healthy lifestyles indicate that majority of university students are minimally engaged in health-promoting behaviors and exhibit behavioral health risks such as tobacco use and improper diet and physical activities.^[10,11] Some diseases such as prehypertension,^[12] psychological symptoms and mental illness, and obesity and being overweight^[13] are also on the rise among college students. These behavior patterns and their consequences typically persist into adulthood, jeopardizing individuals "health status in later life."^[14]

Young adults, in consideration of important lifestyle changes, are arranged to negatively modify their way of eating in terms of the variety, the consumption of fruit and vegetables, and the frequency and timing of intake.^[15,16] The years spent at the university represent a critical period that is able to influence both the quality of lifestyle and eating habits of the subsequent adulthood^[17] and, also, on long term, the health of the individuals.^[18]

However, the university period also encompasses stresses for students trying to achieve success in their academic goals despite the financial constraints that many reports. Such stressors, in combination with experiences of "freedom" from parental restrictions, might support the development of risky lifestyles, for example, high consumption of alcohol and drugs, and a low concern for healthy nutrition and restful sleep (El Ansari and Stock, 2010). The literature suggests that admission to the university is a new stage of life for students that are generally associated with independence, social activities, and changes in lifestyle and behavior including changes in nutritional habits.^[19,20] Taking in consideration this background, special attention should be paid to university students as a group particularly prone to poor dietary habits.^[21]

Hence, the present study was undertaken for the assessment of lifestyle and eating habits among undergraduate students in Najran University.

MATERIALS AND METHODS

Undergraduate male students ($n = 300$) enrolled in the 2nd to 5th years of the degree course in Medical Sciences at Najran University (Najran, Saudi Arabia) were invited to participate in the study during the period April-June 2014. The participants were required to be free of diet-related health problems and to be consuming their usual mixed diets. Those who met the

study criteria were invited to complete a self-administered eating habits and lifestyle questionnaire. It does not report any experiment on human or biological human samples, nor research on identifiable human material and data because it is an observational survey conducted by an anonymous questionnaire among university students. Indeed, to protect the privacy of subjects and confidentiality of their personal information and to minimize the impact of the study on their physical, mental, and social integrity, the research was wholly conducted anonymously; thus, no identifiable personal data are reported. Verbal informed consent was obtained from all subjects. Once their willingness to participate was verified, participants were informed of the study's aims, and how to complete the questionnaire.

Characteristics of the Questionnaire

A self-administered questionnaire was used to obtain demographic, social, and cultural data, as well as information on eating habits, health and nutritional status (Annex 1). The questionnaire had been prepared in English and was translated into Arabic based on previously published instruments which has been standardized and validated to be used among university students.^[22] The first section focused on general information of the student including his faculty, nationality, age, height, and weight. The second section included eating habits, kinds, and frequency of foods consumed such as carbohydrate, fats, vitamins, soft drinks, and fast food. The third section considered physical activity including sports activities such as soccer, volleyball, tennis, walking, and horse riding. The fourth section was dedicated to sleeping habits which included time to go to bed, sleeping hours per day, and taking a nap during daytime. The last section included questions about rate of daily smoking, the main reason that leads to smoking, and the intention to quit smoking. This study has some possible limitations that need to be discussed: (1) including males only in our study has a cultural background, so we had a great difficulty in including female students of Najran University to our research, (2) using self-administered questionnaire instead of interviewing techniques, which are better, because of limitations in time and budget.

Sampling Unit

- Inclusion criteria: Male bachelor students of Najran University
- Exclusion criteria: Diploma and post-graduate students of Najran University.

Data Analysis

The questionnaire was labeled and coded by the researcher. The data obtained were subjected to analysis using Microsoft Office Excel 2007.

RESULTS

Diet

Age and number of daily meals

The research was conducted in 300 male students of Najran University, of which 56.67% aged between 21 and 23 years and 34.34%, 8.66%, and 0.33% aged between 17-20, 24-27, and <28 years, respectively. As shown in Figure 1, most of the students have three meals daily on a regular basis, whereas few students shown to have more than three meals a day.

Breakfast and snacks between the meals

Majority of the students have their breakfast at times, whereas some students consider breakfast an important component in their diet and always have it. Moreover, very few students never have breakfast on a daily basis as shown in Figure 2. On the other hand, few students always have snacks between meals, but majority have it only sometimes (Figure 2).

Eating vegetables and meat per week

Majority of the students 71.67% have vegetables from time to time in a week. About 37.33% of students have meat every day, and 27.66% have three times a week as shown in Figure 3.

Drinks and fast food

Table 1 describes the weekly intake of soft drinks and fast food. Results indicate increased fast food intake and decrease in fish meal.

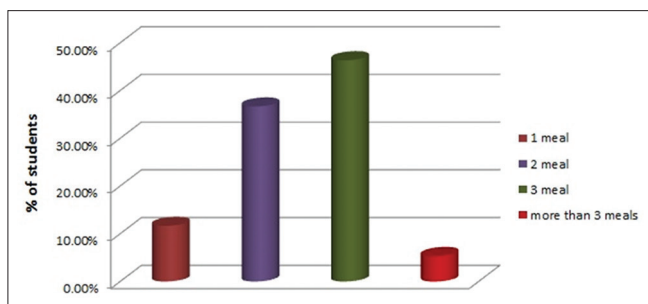


Figure 1: Students with number of daily meals

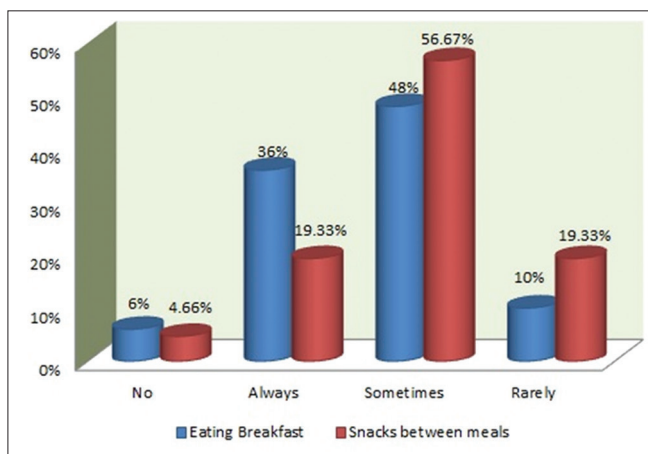


Figure 2: Students eating breakfast daily and snacks between meals

Obesity

About 62% students have a normal body mass index (BMI), obese students are about 12%. Overweight students represent about 11% and the remaining 14.2% underweight.

Physical Activity

Rate of physical activity and time for exercise

About 50% of the students perform physical activities and exercise sometimes, whereas few students have a habit of performing them on a regular basis (Figure 4).

Sports activities and walking

Most of the students, i.e., 44.3% participate in ball games (Soccer, tennis, and volleyball), whereas 31.3% walk, 10.6% swim, 7.66% do horse riding, and 6% participate in other activities. Results show that 35.33% of the students spend 10-20 min for walking, whereas 31% walk for 30-40 min and 13.33% spend more than 50 min, whereas 20.33% do not spend any time for walk.

Sleep Habits

Time and duration of sleep

Study shows that about 40% of the students go for sleep between 1 and 3 am and around 50% student's duration of sleep is 4-6 h, and at times, they take a nap during daytime (Figure 5). About 55.66% of the students have reported that their sleep duration is not enough, whereas 44.33% state that

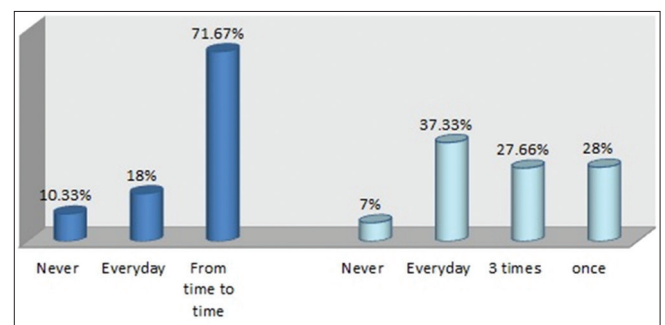


Figure 3: Eating vegetables and meat per week

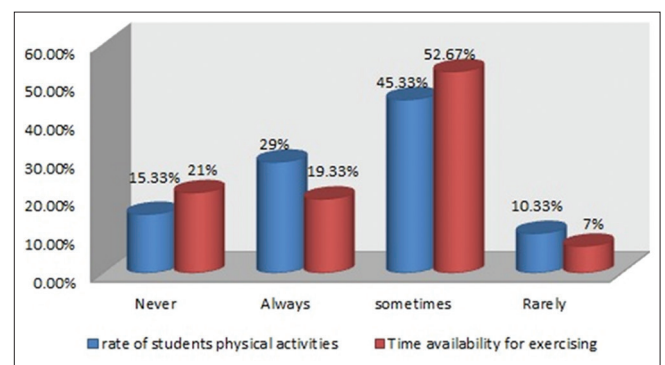


Figure 4: Rate of physical activity and time for exercise

Table 1: Weekly intake of drinks and fast food

Frequency	Drinking stimulants (%)	Drinking milk (%)	Soft drinks (%)	Fish meals (%)	Fast food (%)
Never	7.33	28.33	9.66	64.06	15
1-3 times	52.01	49	29.67	34.03	52.01
4-7 times	22	13.33	24.33	1.6	24.33
<7 times	18.66	9.33	36.34	0.30	8.66

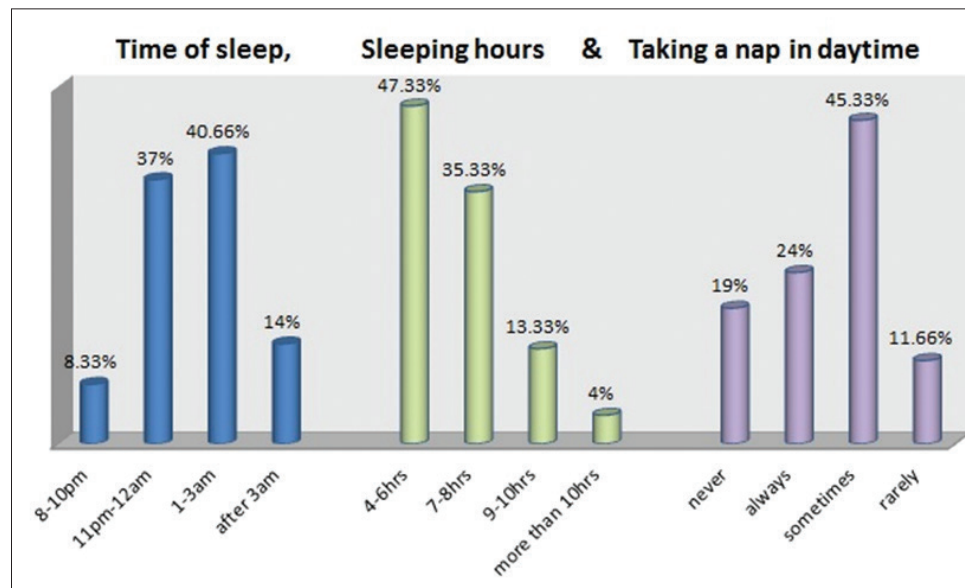


Figure 5: Time and duration of sleep

their sleep duration is enough and restful. A large proportion of the students find relationship between sleeping duration and their activities during the next day (68.33%), whereas 31.66% say that they do not find relationship between them.

Smoking

Number of smokers

The number of students who do not smoke (82.34%) exceeds the percentage of smokers (17.66%). However, 39% students are passive smokers among 82.34%. Actual non-smokers are 43.34%.

Smoking status

The present study shows about 37% of the students smoking 3-10 cigarettes per day. Moreover, more than 50% of them have been smoking for more than 2 years and the major reason for smoking being friends as shown in Figure 6.

Awareness and adverse effect of smoking

Results show that 88.68% of the students are well aware of smoking’s adverse effects on health, whereas 11.32% have no idea about its health hazards. More than half (66.08%) have experienced adverse effects of smoking, and the remaining (33.92%) did not experience adverse effects of smoking. About 16.98% students do not have an intention to give up smoking, whereas 83% said that they want to quit.

DISCUSSION

Starting the day with a healthy breakfast, having about five daily servings of fruit and vegetables, and consuming nutritional food and drinks on a regular basis, form the essential components of a healthy diet and help prevent the development of chronic illnesses later on in life. It has been established that childhood obesity is increasing worldwide,^[23] with recent trends suggesting that the sharpest upsurges in prevalence are in the Gulf Cooperation Council countries.^[24] It is increasingly accepted that an accumulation of environmental, physiological, personal, and lifestyle factors throughout life play a major role in cardiovascular disease morbidity and mortality.^[25]

Studies concerning the dietary and lifestyle behaviors of students in the health career reported controversial results, but most of these studies indicated that the majority of these students have a high tendency to engage in unhealthy dietary and lifestyle habits including meal skipping, low fruits and vegetables intake, high fast food consumption, and minimal physical activity.^[26-28]

Analysis of the dietary habits of the students in the present sample revealed adoption of several undesired dietary habits. The majority of the students in the study, however, did not reach healthy diet benchmarks, with almost two-thirds of them having only between 1 and 2 weekly servings of fruit

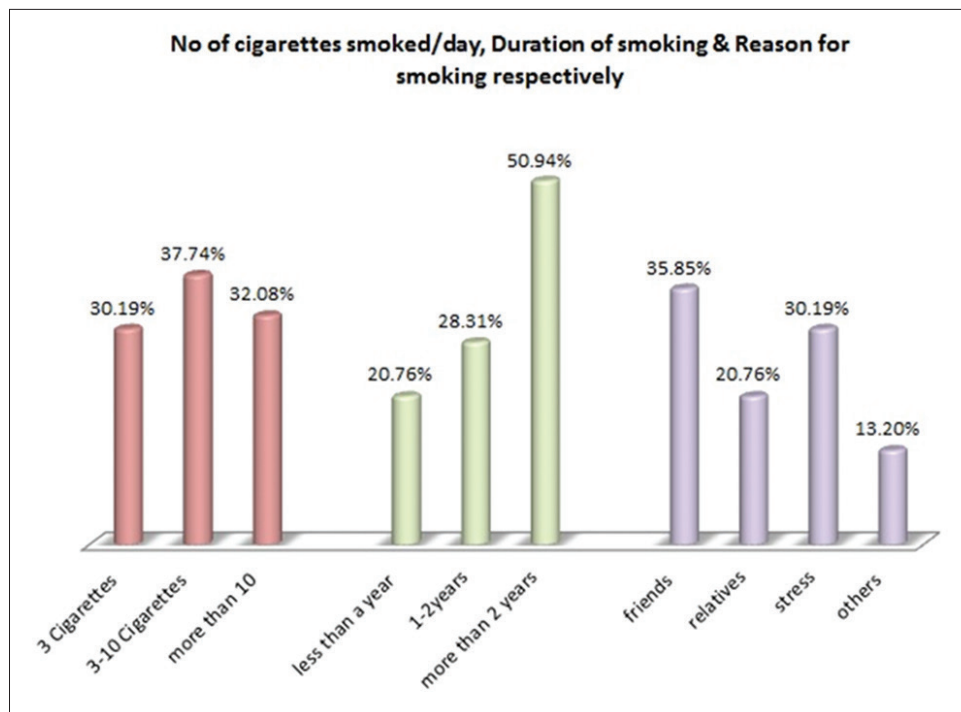


Figure 6: Smoking status of the students

and vegetables, more than half choosing the less healthy food, fast food in particular, and about one-third only having a regular healthy breakfast on a daily basis. These figures reflect the rather unhealthy patterns of the Najran University students in general. Only 18% of students have portions of vegetable and fruits on a daily basis, 62.06% never have a fish meal per week which is important for students' academic performance. Only about one-third have regular breakfast, which is well below the European Union (EU) average; though daily fruit intake is within the EU average and about 36% consume soft drinks more than 7 times a week.^[29] Unhealthy dietary behavior is one of the six top health risk behaviors identified in college students.^[30] When college students leave home and adjust to independent living, good dietary habits decline, and poor dietary habits often tend to get worse.^[31] Nevertheless, during these transitional years of 18-24 years of age, the establishment of healthful lifestyle behaviors can have a long-lasting impact on the students' health and health of their future families.^[32]

Body weight is an issue of serious concern in Malta, one-third of the adults are overweight and one-fifth obese, 15-year-old are the most overweight and obese out of 38 countries in Europe and North America according to the WHO, and 31.4% of those aged 15-24 are overweight or obese.^[33] Our study examined students' BMI. Almost two-thirds (62%) of the students have normal BMI, 14.2% are underweight, 11% are overweight, and 12% are obese. Based on the National Nutrition Survey of 2007, the prevalence of obesity in the Kingdom of Saudi Arabia was 23.6% in women and 14% in men. The prevalence of overweight in the community was determined to be 30.7% for men as compared to 28.4% for

the women. Similarly, the Coronary Artery Disease in Saudis Study of 2005 estimated an overall obesity prevalence of 35.5% in the Kingdom: In other words, one in every three people in Saudi Arabia is obese.

Link between enhanced physical activity and lowering the risk of obesity among university students has been established in a number of previous studies.^[34,35] The present study revealed that only 29% of the students engaged in regular exercise (compare to 46% of American College Students, AHCA, 2009), whereas another 25% stated that they never or hardly ever perform physical exercise. Students, however, are aware of the need for regular exercise; they blame lack of time and opportunity as part of the problem. About 31% walk regularly for about 30-40 min daily in the university campus. The students suggest more access to a campus gym (one of the most frequent suggestions) and more sports facilities. In Saudi Arabia, the study of 1333 Saudi males aged 19 years and older in Riyadh, Saudi Arabia, showed that over 53% were totally physically inactive and another 27.5% were irregularly active. Only 19% of the entire samples were active on a regular basis.^[36]

Sleep is essential for individuals health and well-being, according to the National Sleep Foundation. Yet, millions of people do not get enough sleep, and many suffer from insomnia. Everyone's individual sleep needs vary. In general, most healthy adults need 16 h of wakefulness and need an average of 8 h of sleep every night. In this study, most students about 40% go to bed between 1 and 3 am, 47% sleep for <6 h/day, and more than 50% feel that they are not getting enough sleep although 24% always take a nap and 45% take

a nap occasionally. This lack of sleep can affect the learning process very badly.^[37] Sleep has a relevant facilitating role in learning and memory processes. Conversely, sleep deprivation and/or fragmentation usually impair these functions.^[38]

In Saudi Arabia, smoking is increasing, particularly among the youth. The prevalence of smoking in adults in 2000 was reported as 11.6%, being higher among males (21.1%) than among females (5.2%).^[39] In the Eastern Province, Saudi Arabia, a study conducted among female paramedical students in 1999 revealed that the overall smoking prevalence was 5.6%.^[40] Our study revealed that a great majority of students did not smoke, with 17.2% of the students being regular smokers. Two-thirds of the smokers smoke <10 cigarettes daily, whereas one-third smoke 1 package or more during the day. The main reason of what lead to majority of smokers 35.8% to smoke for the first time was due to their friends, whereas 30.19% stated that stress was the leading cause for them to smoke. It is disconcerting to note that with tobacco remaining the leading preventable cause of death in the world, with half of those who smoke likely to die as a result of the habit,^[41] which 88% of these smokers are aware of. In an international study with 19,298 university students aged 17-30 years from 23 countries, it was reported that an overall prevalence rate of 34% among male students and 27% among female students. Prevalence was highest among samples from South European countries such as Spain, Portugal, Greece, and Italy, with 44% of males and 39% of females being current smokers, in comparison to 31% and 28% in Western Europe/USA, respectively.^[8] On the other hand, there is a good sign that gives us hope as 83% of the smokers stated that they intend to quit, whereas only 17% do not intend to quit at all. It is also important to mention the 39% of non-smokers stated that they accompany smokers while they are smoking which qualifies them as passive smokers, which is as bad as smoking itself if not worse.

These aspects seem to suggest that attending university, especially away from the family, may play a role in the onset of unhealthy lifestyle though further studies taking in account also socioeconomic norms as well as living arrangements are required to assess if they can represent risk factors.

CONCLUSION

This study showed the difficulties that university students encounter, especially when they are away from the family, in following a healthy lifestyle and taking care of themselves from the nutritional point of view. The present data reveal relatively alarming prevalence of overweight/obesity, unhealthy dietary practices, and lifestyle behaviors that should be targeted and modified. Irregular and infrequent meals together with low vegetables and fruits intake were the most common unhealthy eating habits of the participants. Taken together, these findings call for the elaboration of university-based health-promoting multisectoral integrated programs. These programs may serve as a sustainable way to support healthful lifestyles for these

university students. Based on the results of this study, specific behavioral intervention programs should be implemented to ensure the opportunity to overcome barriers to adopt healthy dietary and lifestyle behaviors. Implementation of such tailored programs could ensure optimal long-term health of future health-care professionals who will serve as positive patient role models. The current research provides valuable data that could be used by policymakers, and university directors to plan strategies aiming at improving the health of future generations in Saudi Arabia. Further understanding of the factors shaping the eating behaviors of students living on Saudi university campuses including analysis of university microenvironments is needed.

Finally, though we have examined various aspects of students' health and lifestyle, the questionnaire was not exhaustive of university life, particularly with regard to issues related to students' learning experiences. The university and college arenas represent the final opportunity for nutritional education of a large number of students. Our findings suggest the need for strategies and coordinated efforts at all levels (family, university, community, and government) to reduce the tendency of overweight and obesity among college students and to promote healthy eating habits in our youth.

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ANNEX: 1**Questionnaire:****i. General info:**

College

Age (17-20) (21-23) (24-27) (Above 28)

Length:

weight:

ii. Diet:

No. Questions

1 How many meals does your daily diet contain?
(1 meal) (2 meals) (3 meals) (more than 3)2 Is breakfast an important component in your diet?
(No) (Always) (sometimes) (Rarely)3 How often do you have snacks between meals (chips, chocolate, sweets)?
(Never) (Always) (sometimes) (Rarely)4 How often do you have stimulants (Tea, coffee) in a week ?
(Never) (1-3 times) (4-7 times) (more than 7 times.)5 How many cups of milk do you have a week?
(Never) (1-3 times) (4-7 times) (more than 7 times.)6 How many fish meals does your diet contain in a week?
(Never) (1-3 times) (4-7 times) (more than 7 times)7 How often do you have vegetables in a week?
(Never) (Every day) (From time to time)8 How often do you have meat in a week?
(Never) (Every day) (3 times) (once)9 How often do you have fast food in a week?
(Never) (1-3 times) (4-7 times) (more than 7 times)10 How often do you have soft drinks in week?
(Never) (1-3 times) (4-7 times) (more than 7 times)**iii. Exercising:**1 Do you exercise?
(Never) (Always) (sometimes) (Rarely)2 Which of these sport activities do you often participate in?
(soccer, volleyball, tennis) (swimming) (walking) (riding horses) (other)3 Do find the time for exercising?
(Never) (Always) (sometimes) (Rarely)4 What is the total time that you spend in walking daily?
(Nothing) (10-20 min) (30-40 min) (more than 50 min)**iv. Sleeping habits:**1 What time do you go to bed?
(8-10pm) (11pm-12am) (1-3am) (after 3am)2 Do you go to bed on time everyday?
(Never) (Always) (sometimes) (Rarely)3 How many hours you sleep daily?
(4-6 hrs.) (7-8 hrs.) (9-10 hrs.) (more than 10 hrs.)4 Do you think your sleep duration is enough?
(Yes) (No)5 Do you take a nap at daytime?
(Never) (Always) (sometimes) (Rarely)6 Do you find a relationship between your sleep duration and your energy during the next day?
(Yes) (No)

v. Smoking:

- 1 Are you a smoker?
(Yes) (No)
- 2 Do you usually sit with smokers while they are smoking?
(Yes) (No)
If you're a smoker please answer the following:
- 3 How often do you smoke daily?
(up to 3 cigarettes daily) (3-10 cigarettes daily) (1 package or more)
- 4 You've been smoking for:
(less than a year) (1-2 years) (more than 2 years, mention it.....)
- 5 What's the main reason that lead you to smoking?
(friends) (self-esteem) (relatives) (stress) (others)
- 6 Are you aware of its bad effect on your health?
(Yes) (No)
- 7 Did you experience any of these bad effects?
(Yes) (No)
- 8 Do you wish to quit smoking?
(Yes) (No)