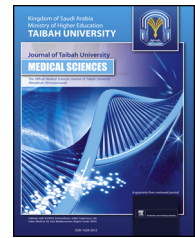




# Taibah University

## Journal of Taibah University Medical Sciences

www.sciencedirect.com



### Original Article

## Fruit and vegetable consumption and its determinants among Saudi university students



Ahmed A. Alsunni, PhD\* and Ahmed Badar, PhD

Department of Physiology, College of Medicine, University of Dammam, Dammam, KSA

Received 15 September 2014; revised 30 November 2014; accepted 30 November 2014; Available online 16 January 2015

### المخلص

**أهداف البحث:** ترتبط التغذية الغنية بالفواكه والخضروات مع انخفاض خطر الإصابة بالعديد من الأمراض المزمنة. وعلى الرغم من أن منظمة الصحة العالمية توصي بتناول خمس حصص على الأقل من الفواكه والخضروات يوميا، إلى أن القليل جدا يتبع هذه النصيحة. تم تصميم هذه الدراسة لتقييم مستوى استهلاك الفواكه والخضروات والعوامل المؤثرة على ذلك بين طلاب إحدى الجامعات السعودية.

**طرق البحث:** أجريت هذه الدراسة المقطعية على طلاب جامعة الدمام في المملكة العربية السعودية، خلال العام الدراسي ٢٠١٢م-٢٠١٣م. اختير عدد ٣٦٧ من طلاب الجامعة بطريقة عشوائية. وتم دراسة مستوى استهلاك الفواكه والخضروات باستخدام استبانة تضمنت معايير تنبؤية عن وتيرة ونوع الاستهلاك الغذائي. وحسب مقدار الارتباط بين الاستهلاك مع مختلف المحددات المحتملة باستخدام مربع كاي.

**النتائج:** تضمنت الدراسة ٢٢٣ (٦٠.٧٦٪) من الذكور و ١٤٤ (٣٩.٢٣٪) من الإناث. كان متوسط عمر المشاركين  $22.40 \pm 1.83$  في حين كان متوسط مؤشر كتلة الجسم  $23.9 \pm 4.79$ . لم يكن مستوى الاستهلاك مطابقا لتوصية منظمة الصحة العالمية لدى ٨٤.٤٧٪ من المشاركين. لم يكن هناك ارتباط بين الجنس ومتوسط مؤشر كتلة الجسم مع مستوى الاستهلاك. وهناك ارتباط بشكل كبير بين الأشخاص الذين يتناولون كميات كبيرة أو متوسطة من الفواكه والخضروات مع العيش مع العائلة، والتخطيط للوجبات اليومية بأنفسهم، والوعي بتوصيات منظمة الصحة العالمية حول تناول الفواكه والخضروات، والوعي بأهمية اللياقة البدنية وممارسة التمارين الرياضية بانتظام.

**الاستنتاجات:** تناول الفواكه والخضروات بين طلاب جامعة الدمام هو أقل بكثير من المستوى الموصى به من منظمة الصحة العالمية. هناك حاجة ماسة لتثقيف الشباب السعودي على أهمية تناول الفواكه والخضروات في وجباتهم لحياة أكثر صحة.

**الكلمات المفتاحية:** المحددات؛ الفواكه؛ المملكة العربية السعودية؛ طلاب الجامعة؛ الخضروات؛ منظمة الصحة العالمية

### Abstract

**Objectives:** Diets rich in Fruits and Vegetables (F&V) are associated with reduced risk of various chronic illnesses. Although World Health Organization (WHO) recommends consumption of at least five portions of F&V a day, very few follow this advice. This study has been designed to assess F&V consumption and factors affecting its usage among students of a Saudi university.

**Methods:** This cross-sectional study was carried out at the University of Dammam in Kingdom of Saudi Arabia during the academic year 2012–2013. A total of 367 university students were randomly selected. F&V consumption was assessed using a questionnaire containing predictive parameters about the frequency and type of food consumption. The association of F&V consumption with various potential determinants was calculated using Chi-square test.

**Results:** The study included 223 (60.76%) male and 144 (39.23%) female participants. The mean age was  $22.40 \pm 1.83$  while the mean BMI was  $23.9 \pm 4.79$ . Consumption of F&V was not at par with the WHO recommended consumption level of 84.47%. Gender and BMI were not found to be significantly associated with F&V consumption. Living with the family, planning daily menu by themselves, awareness of WHO recommendations about F&V consumption, fitness consciousness and regular exercise were significantly associated with moderate or high F&V consumption ( $p < 0.001$ ).

**Conclusions:** F&V consumption in the students of university of Dammam is far less than the WHO

\* Corresponding address: Department of Physiology, College of Medicine, University of Dammam, PO Box 2114, Dammam 31451, KSA.

E-mail: aalsunni@ud.edu.sa (A.A. Alsunni)

Peer review under responsibility of Taibah University.



Production and hosting by Elsevier

recommended level. There is a dire need to educate Saudi youth about the importance of F&V in their diet for a healthier life.

**Keywords:** Determinants; Fruit; Kingdom of Saudi Arabia; University students; Vegetable; WHO

© 2015 The Authors.

Production and hosting by Elsevier Ltd on behalf of Taibah University. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## Introduction

While good eating habits are an essential part of a healthy lifestyle,<sup>1</sup> poor nutritional habits are established risk factors for chronic diseases.<sup>2</sup> The transition from adolescence to adulthood is a period often characterized by an unhealthy lifestyle in which young students become independent and adopt lasting health behavior patterns.<sup>3</sup> Therefore, this transition period can significantly shape the kind of dietary habits young adults adopt, which can have implications throughout their life.<sup>4</sup>

Fruit and vegetables (F&V) are important components of a healthy diet. It has been suggested that a sufficient daily consumption of F&V could help prevent major illnesses. Diets rich in F&V are associated with a decreased risk of many chronic diseases.<sup>5–7</sup> In addition, a high intake of F&V has been associated with a reduced incidence of certain cancers, Type 2 diabetes, and cardiovascular diseases.<sup>8,9</sup> Low F&V intake is a key risk factor for several non-communicable diseases that are major causes of mortality worldwide.<sup>10,11</sup>

According to the global burden of disease project, there are 2.7 million deaths globally which can be attributed to insufficient F&V consumption. Moreover, it has been shown that an increase of F&V intake may reduce ischemic heart disease by 31%, strokes by 19%, and stomach cancer by 19%.<sup>12</sup>

The exact mechanisms by which F&V reduce the risk of these chronic diseases are not precisely known. A combination of antioxidants and phytochemicals found in F&V might promote health by combating free radicals, which are linked with the early phase development of some chronic diseases.<sup>13</sup> F&V contain a variety of vitamins, minerals, and food compounds that have been inversely associated with cardiovascular disease risk factors.<sup>14,15</sup>

In 1990, the World Health Organization recommended that everyone must consume at least five portions of F&V a day to prevent some types of cancer and other chronic diseases.<sup>16</sup> The advice has been promoted by public health campaigns in many developed countries for nearly two decades.<sup>17</sup> In Kingdom of Saudi Arabia, the Ministry of Health also introduced the 'Healthy Palm Saudi dietary guidelines' that encourage Saudis to consume 2 to 4 portions of fruits and 3 to 5 portions of vegetables per day.<sup>18</sup> Despite all these efforts compliance is minimal. Stepwise surveys of WHO in six Arabic countries (Egypt, Iraq, Jordan, Kuwait, Kingdom of Saudi Arabia and Syria) showed that a very small percentage of the population follows these recommendations. Jordanians

were better amongst the others with 43% population following the recommendations, while only 4.3% Syrians observed them. As regards the Saudi population, these studies showed only 6.55% of the population following the recommendations.<sup>19</sup>

Therefore, it is highly important to educate the Saudi Population to adopt the WHO's recommendations for a minimum consumption of F&V. It is very important to study the actual pattern of F&V consumption in the kingdom before initiating any campaign. A careful review of literature suggests that studies on F&V consumption patterns in the kingdom of Saudi Arabia are very few. The results of these studies have shown that the majority of the Saudi population did not meet the minimum daily recommendation for F&V intake. This was very obvious among university students.<sup>20</sup> In addition, to the best of our knowledge no previous study examined in detail the consumption of F&V and its determinants among university students in both genders. The objective of this study is to assess consumption patterns of F&V amongst the students at a Saudi University. We also intended to determine the association of selected physiological and psychosocial factors with F&V consumption among the students.

## Materials and Methods

This cross sectional study was carried out in the academic year 2012–13 at the department of Physiology, college of medicine, University of Dammam with the approval of the university's Research & Ethics committee.

### *Study population and sample size calculation*

The study's population included only students of the academic year 2012–13 at the main campus of University of Dammam irrespective of college or gender (N = 7987). A sample size of 367 (n) was calculated based upon total strength of students in the main campus (7987), confidence level of 95%, confidence interval (margin of error) of 5 and response distribution of 50% using an online sample size calculator.<sup>21</sup>

### *Subject recruitment*

The student ID numbers available with the deanship of students affairs were used to create a unified list of all the 7987 students on the main campus (Numbered 0001 to 7987). An online random number generator software<sup>22</sup> was used to generate 500 Random numbers. The number of 367 (sample size) was exceeded to ensure completion of sample size in case of non-availability, declared dietary preferences or non-consent. The identified students were conveyed the message through their class leaders and by University email system to fill out the questionnaire at their time of convenience.

The students not available or refusing to participate were dropped out and subsequently replaced by the next number from the randomly generated numbers. Likewise the students who had defined dietary preferences like pesco-vegetarians, vegetarians or vegans were excluded. After final inclusion in the study, the students answered the questionnaire in direct supervision of anyone of the two authors, both of

Download English Version:

<https://daneshyari.com/en/article/3484367>

Download Persian Version:

<https://daneshyari.com/article/3484367>

[Daneshyari.com](https://daneshyari.com)