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Awareness of Saudi Population about the Impact of Date Syrup (dibis) on Heart Diseases

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ABSTRACT

The aim of this study was to measure the awareness of Saudi society about the important of dates syrup (Dibis) and its role to prevent cardiovascular disease. A cross-sectional study was conducted. A self-administered questionnaire was used online through web link to obtain information. A total of 793 Saudi participants shared in the study. The field work lasted for one week from 5/2/2015 to 11/2/2015. Fifteen close- ended questions were used to design a questionnaire visualizing the Saudi population knowledge about Date Syrup. Our results revealed that, the majority of the participants drive their knowledge from the websites which need more community encouragement of document resources. In spite of 77% of them chosen the correct answer of nutritional value of date syrup but 52 % did not have the specific scientific knowledge about date syrup; which back up community education about national healthy resources. Despite 51 % of Saudi Arabia considered date syrup as dietary inherited habits but the majority did not have clear medical general knowledge's. About 34 % only known that date syrup contains pectin, 40% clarified that date syrup containing magnesium and copper, 63% knew that date syrup treats anemia, 44 % only confirm that tablespoon of date syrup every mooring increase the body's immunity against disease especially heart, 47 % addressed that date syrup contract the blood vessels and lastly 22 % confirmed that date syrup treated shortness breath. It could be concluded that, community popular education represents a crucial role to improve the social awareness of date syrup uses and benefits.

Key words: awareness-dates syrup (Dibis) - prevent cardiovascular disease

Introduction

In many Arab countries (especially in Saudi Arabia) date fruits (*Phoenix dactylifera* L.), play an important social, environmental and economical role. It constitutes the principal financial and food sources of oasis cultivators. It contributes to the development of subjacent culture (Al-Farsi, 2003). The world production of date fruits are estimated at 5.369143 millions tones. Kingdom of Saudi Arabia (KSA) is ranked the second world producer according to FAO (2010) in terms of quantities where KSA produced 14.4% (El-Habba and Al-Mulhim, 2013). In 2012, Saudi Arabia date annually production amount reached 103,000 tons (Arab Agric. Statistics Year Book, 2014).

Date syrup (locally named Dibis) is probably the most common date product. It is produced in two different ways: either at domestic or village level by extraction and boiling down of the juice, or on a semi or full industrial scale. The process consists of extraction, clarification and concentration of the date juice. Date syrup is thick- dark brown syrup. Glucose and fructose are the major sugar presented in date syrup and total sugar contents reached 88%. Date syrup contains elements which may play important role of considering the date syrup as rich nourishment (Al-Khateeb, 2008 and AL-Hooti *et al*., 2002). In the two past decades, Diabetes mellitus (DM) is firmly established as a major human health threat as it became the 5th leading cause of death worldwide, following infectious diseases, cardiovascular disease, cancer and trauma (Wang *et al.*, 2014). Epidemiological studies have consistently shown that, high fruit and vegetable consumption is associated with a reduced risk of several chronic diseases such as coronary heart disease (CHD), cardiovascular disease (CVD), cancers, aging, atherosclerosis, neurodegenerative diseases (such as Parkinson and Ahlzeimer), and inflammation. These risks can be decreased by the optimal mixture of phytochemicals such as dietary fiber, phenolics, natural antioxidants, and other bioactive compounds in type of diet (Al-Farsi *et al*., 2007). It is well documented that, both types of DM are associated with increased risk of macrovascular and microvascular complications. In addition to these widespread defects

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in the diabetic systemic microvasculature, macrovascular complications such as coronary heart diseases; stroke and peripheral vascular disease are thought to be the primary causes of morbidity and mortality in diabetic patients (Vayalil, 2012). This may be attributed to the disturbances in energy metabolism of the heart have been implicated as important contributors to diabetic cardiac complications (Wang *et al*., 2014). The major component of dates (about 70%) are carbohydrates (mainly the sugars; sucrose, glucose, and fructose). The sugars in dates are easily digested and can immediately be moved to the blood after consumption and can quickly be metabolized to release energy for various cell activities (Al-Farsi and Lee, 2008).

Date syrup can be used as a sweetening and flavoring agent for dairy products such as fermented milk products. Some researchers have been made to use date syrup in the preparation of cake, cookies and sweet breads and for direct use on pancakes. Furthermore, date syrup can be used to replace caramel in candy and fruit bars (Al-Farsi *et al*., 2007). Food processing can affect physico-chemical properties and sensory characteristics of food products. Many studies reported that the enzymatic processed fruits and vegetables have different composition than unprocessed products (Buchert *et al.*, 2005; Demir *et al.*, 2001). There is no scientific study about the date syrup therefore, this study aimed to measure the awareness of Saudi society about the important of dates syrup (Dibis) and its role to prevent cardiovascular disease.

Methods:

A cross-sectional study was conducted. A self-administered questionnaire was used online through web link to obtain information. A total of 793 Saudi participants shared in the study. The field work lasted for one week from 5/2/2015 to 11/2/2015. Fifteen close- ended questions were used to design a questionnaire visualizing the Saudi population knowledge about Date Syrup.

A self-strutted questionnaire was used in this study. It was face validity and modified according to the views of 2 experts from Food and Nutrition department in King Abdulaziz University. A pilot study was performed among 10 volunteers using a hard copy of the questionnaire. An Arabic version of a questionnaire, to be understandable by whole participants, was submitted & distributed through. Consisted of 19 Questions, first 5 questions were about Demographic variables (name, age, sex, Social status, Educational level. Next 14 questions tested the knowledge towards questions were Coded Yes, No and don't know.

A Web- link was send to the participants to answer the online survey, which took approximately 5 to 10 minutes to complete. The questionnaire outcome results were translated to English.

Data Analysis:

The data collected from internet were analyzed using SPSS version 16.

Results and Discussion

Figure 1 showed that, 57.3% of member of the questionnaire drive their nutrition form their information and various media line while 56.6% drive theirs from web sites and 40.8 % of documented scientific sites (Fig. 1).

The ration majority 52% of the questionnaire answered it did not have a scientific background for date syrup. While, the proportion of the matter this background is 48% (Fig. 2).

The question about the nutritive value of date syrup 76.5 % were knowledge it, while, 23% didn't know the nutritive value of date. But 0% can firmed that there is no nutritional value of date syrup (Fig. 3).

Whether, if date syrup with milk is balanced nutritious meal, 60%% answered yes and 1% No while 39% did not know if this true or not (Fig 4).

Survey results also indicated that, 4% of the members of the questionnaire did not take them and their family, date syrup daily. On the other hand, 53% replied it happens sometime and 43% said no (Fig 5).

When asked about the extent of knowledge of members of the questionnaire that date syrup of dietary habits inherited in Saudi Arabia 51% answer yes and 7 no, while 42% did not know health information (Fig. 6).

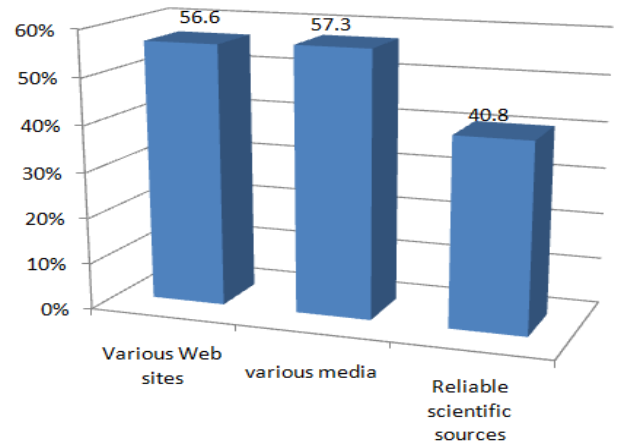

Fig. 1: A source of nutritional information

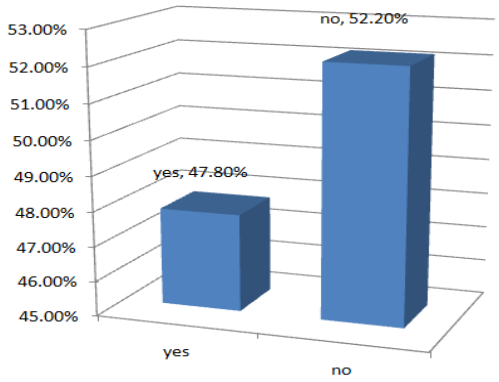

Fig. 2: You have a scientific background for dates syrup

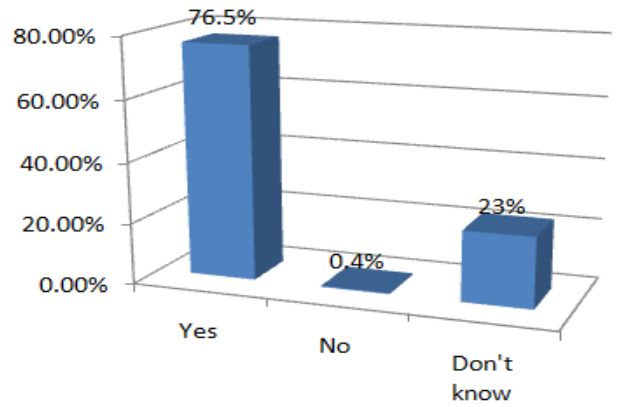

Fig. 3: Dates syrup high nutritional value

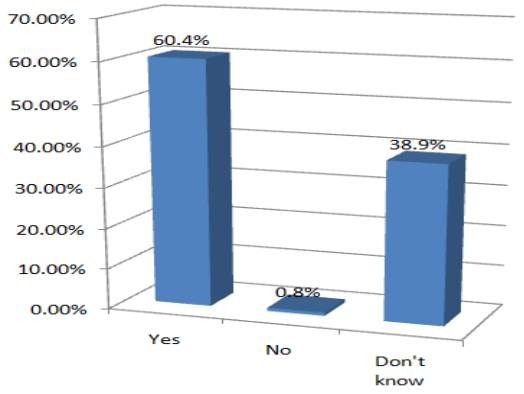

Fig. 4: Dates syrup with milk is a balanced meal

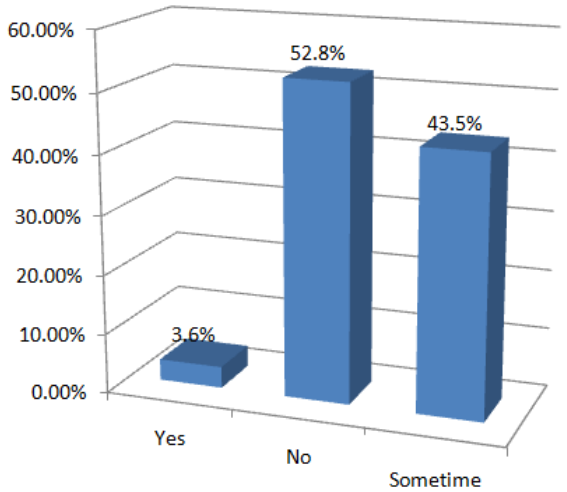

Fig. 5: You and your family eat dates molasses daily

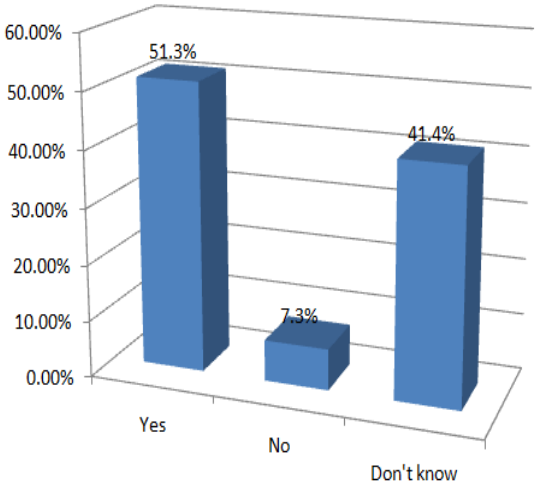

Fig. 6: The dates syrup is from dietary habits inherited in Saudi Arabia.

The results of the survey indicated that 46% knew that, date syrup taste better and sweeter than cane molasses (molasses) and 4% denied this information. But 50% answered they did not knew if the piece of information was true or not (Fig. 7).

Results of the survey formed that that 34% of those who do knew that date syrup contain pectin which reduced the proportion of blood cholesterol and protect against atherosclerosis and only1% confirmed not to health information. While 65% answered they did not knew if this information is true or not (Fig. 8).

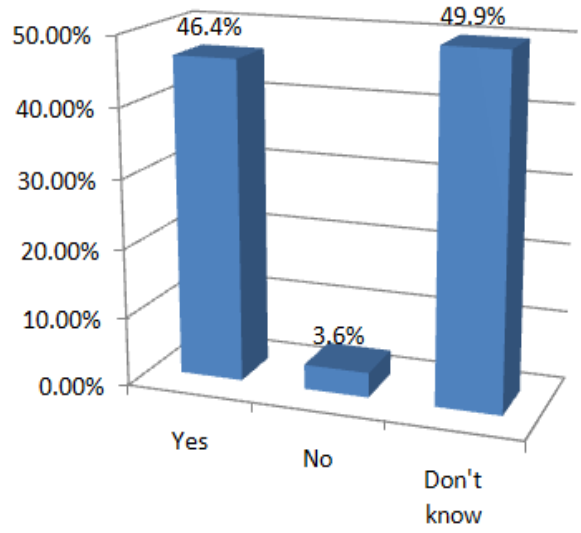

Fig. 7: Dates syrup taste better and sweeter than cane molasses - and molasses

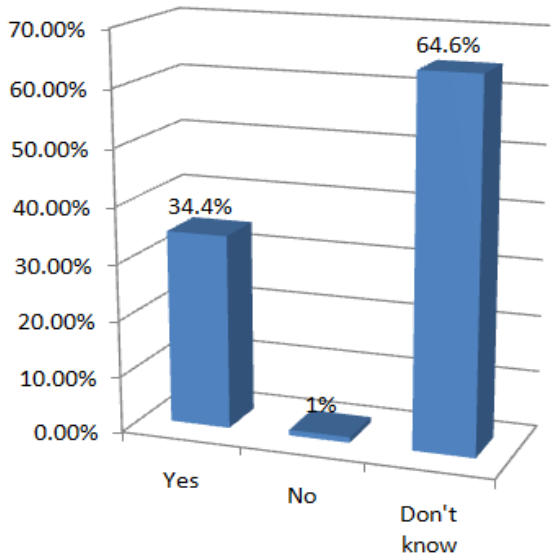

Fig. 8: Molasses Dates contain pectin lowers the rate of blood cholesterol and protect against atherosclerosis

Found that 40% are aware that the date syrup containing magnesium and copper, which making it prevents heart palpitations and 1% said not to be true. While 59% did not know if that is right or wrong (Fig. 9).

From survey, we found that 63% knew that date syrup treats anemia because it contains both iron and vitamin B2 and 1% said no, while 36% did not knew the validity of the information (Fig. 10).

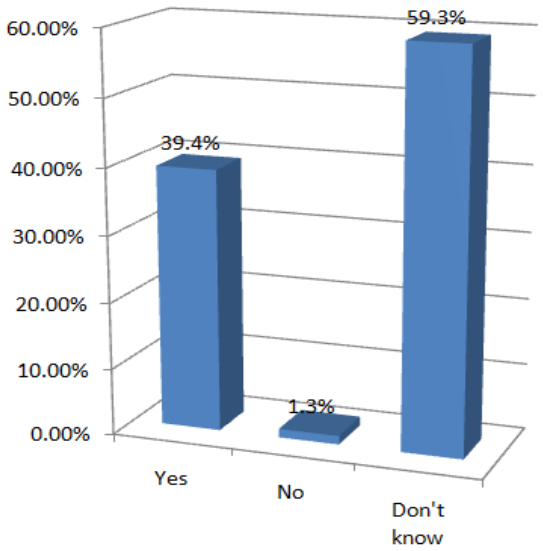

Fig. 9: Dates syrup contain magnesium, copper It prevents heart palpitations

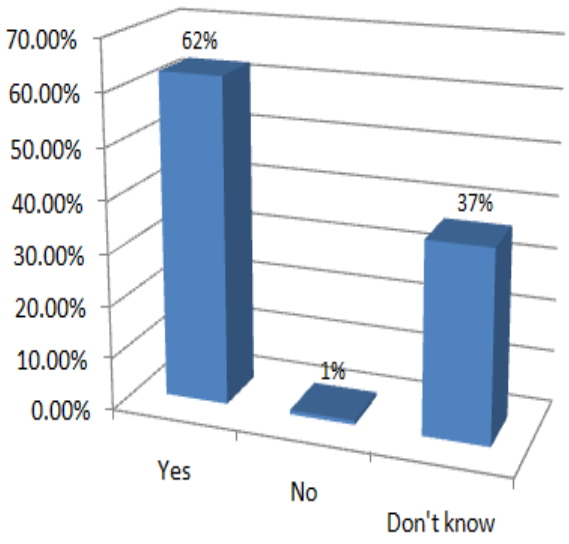

Fig. 10: Dates molasses addresses anemia because it contains iron and vitamin B 2

Thirty five percent of the members of the questionnaire answered that date syrup extracted from fresh wet dates best comparing by date syrup extracted from dry dates and 5% answer by no, on the other hand, 60% of the sample members answered, they did not knew id the information is right or wrong (Fig. 11).

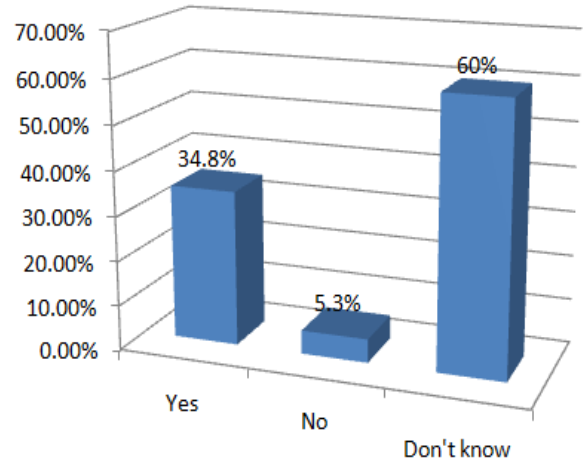

Fig. 11: Dates syrup extracted from fresh-dates (rotab) best nutritional from syrup extracted from dry dates

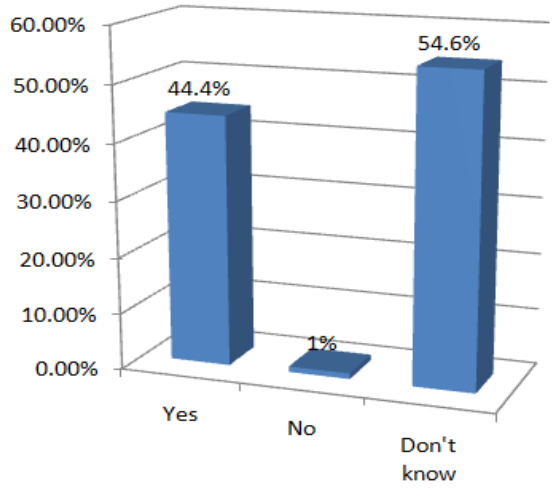

Fig. 12: Tablespoon of molasses dates every morning increases the body's immunity against disease, especially heart disease in general

Tablespoon of date syrup every mooring increase the body's immunity against disease especially heart disease were 44% with this information and 1% denied the information, while 55% did not know anything about it (Fig. 12).

Date syrup addressee contraction of blood vessels and gender weakness of the body. Forty seven percent of the questionnaire confirmed that health effect and 1% did not know anything about it (Fig. 13).

Date syrup treated shortness breath. Twenty tow percent of the sample questionnaire confirmed this information and 2% confirmed it is not, while, 76% did not know if it is right or wrong (Fig. 14).

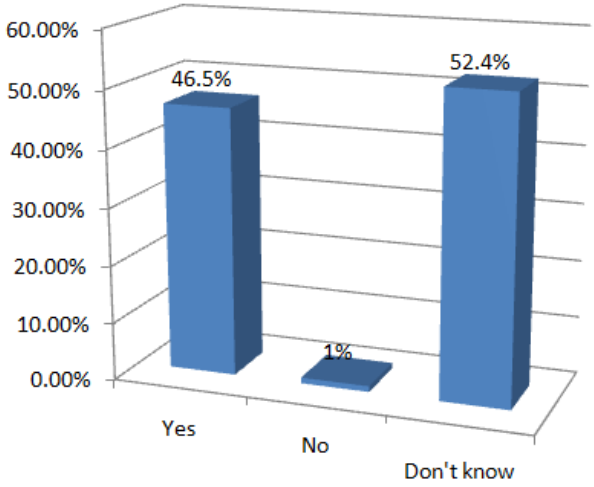

Fig. 13: Dates syrup addresses contraction of blood vessels and general weakness of the body

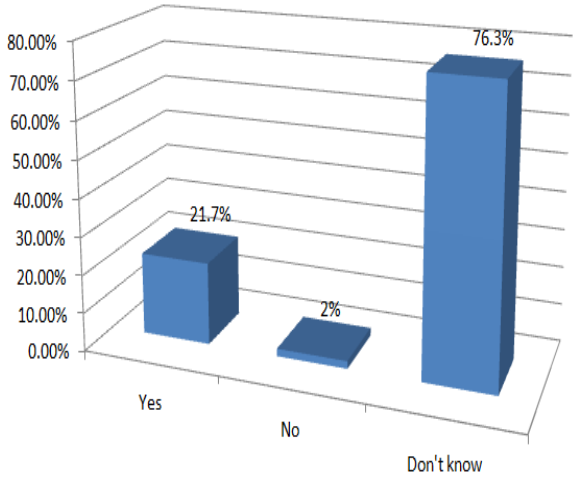

Fig. 14: Dates molasses treats shortness of breath

Conclusion & Recommendation

The purpose of the present study was to measure the Saudi society awareness of the importance about dates syrup and its effectiveness for prevention of heart diseases. Our results revealed that, the majority of the participants drive their knowledge from the websites which need more community encouragement of document resources. In spite of 77% of them chosen the correct answer of nutritional value of date syrup but 52 % did not have the specific scientific knowledge about date syrup; which back up community

education about national healthy resources. Despite 51 % of Saudi Arabia considered date syrup as dietary inherited habits but the majority did not have clear medical general knowledge's. About 34 % only known that date syrup contains pectin, 40% clarified that date syrup containing magnesium and copper, 63% knew that date syrup treats anemia, 44 % only confirm that tablespoon of date syrup every mooring increase the body's immunity against disease especially heart, 47 % addressed that date syrup contract the blood vessels and lastly 22 % confirmed that date syrup treated shortness breath. It could be concluded that, community popular education represents a crucial role to improve the social awareness of date syrup uses and benefits.

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