

The Health Effects of Chocolate and Cocoa Product Consumption: Limited Scientific Evidence in Middle East Countries

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Received: May 20, 2022; **Published:** May 27, 2022

Abstract

The consumption of chocolate and cocoa products as functional food is increasing worldwide, including Middle east countries. Although contradictory, its consumption is related to various health benefits due to its high flavonoids and other phytochemical contents. The purpose of this review is to summarize scientific evidences about health effects of chocolate or cocoa product consumption and attitude or behavior among all age groups and gender from some of these countries.

Keywords: *Chocolate; Cocoa; Middle East; Health Effects; Consumption*

Introduction

Although affected by COVID-19 pandemic, most middle east countries have seen rapid economic growth in past few decades. Due to this reason, there was swift and significant nutrition transition, urbanization, change in lifestyle behavior and eating pattern among their general population [1].

The awareness, perception and belief about chocolate and cocoa as a healthy product is rising significantly among young population of middle east countries. The United Arab Emirates is emerging as one of the potential markets for chocolates, due to establishment of new multinational companies, growing local organizations and changing trends towards snack preferences. Moreover, the cultural trend of exchanging gift, especially sweets including chocolates are on rise and in more demands with attractive packing and different size. The United Arab Emirates chocolate market is projected to grow during year 2021 - 2026 [2].

Similarly, the consumption of chocolate and cocoa products in Saudi Arabia has increased heavily in the past few years [3]. In Saudi Arabia, there are studies related to health benefit and risk from different parts of the country. Some of them were contradictory with positive as well as negative health effects. A study performed among students (60 students in three groups) in University of Dammam, Saudi Arabia demonstrated that consumption of 40g of dark and milk chocolate on daily basis during a period of 2 weeks appeared to have favorable effects in reducing perceived stress especially in females. The mean stress scores decreased in groups consuming dark and milk chocolate intervention [4].

On the other hand, study performed by Latif and colleagues demonstrated that the consumption of 40g of dark or milk chocolate daily for a period of 2 weeks did not improve oxidant/antioxidant balance in medical students [5]. In a study performed in Tabuk region, Saudi Arabia, participants (49%) believed that chocolate consumption can contribute in the development of acne and its reduced intake could help reduce acne exacerbation [6]. A recent study about caffeine sources and its intake among Saudi adults with diabetes included chocolate (minor source) among other sources like Arabic coffee (major sources) with females consuming more than males. There was no association between average caffeine intake and HbA1C or any other cardiovascular risk factors. Moreover, the study also demonstrated an inverse association between total chocolate intake (as total caffeine intake source) and age [7].

The use of dark chocolate was among one of the most frequently purchased items from vending machine among target population (UOS students, staff, and faculty members) from University of Sharjah, United Arab Emirates (UAE) [8].

Citation: Nasiruddin Khan., *et al.* "The Health Effects of Chocolate and Cocoa Product Consumption: Limited Scientific Evidence in Middle East Countries". *EC Nutrition* 17.6 (2022): 14-16.

A recent study in Muscat, Oman focused on the awareness, attitude and knowledge about usage and effect of dark chocolate on health [9]. In addition, this study also aimed to demonstrate the attitude of young adults towards the consumption of dark chocolate and to reveal their favorite and preferred dark chocolate brands available in the Omani market. The study demonstrated that participants were well aware and possess knowledge about health benefits of the dark chocolate and showed their interest in choosing the best brands based on the ingredients - especially the cocoa percentage, while purchasing the product [9].

The consumption of sweets and chocolates was reported to be higher among Qatari school children (aged 9 - 10 years) with more consumption in girls (56.5%) rather than boys (28.2%) [10].

A previous study performed by Musaiger and colleagues among adolescents in Bahrain reported a high frequency of consumption of soft drinks, sweets, and chocolate [11]. The amount of ingested caffeine from sources like coffee, tea, cocoa, soft drinks, energy drinks, chocolates and over-the-counter medications was quantified in a survey among Bahraini university students (n = 727). The results showed that approximately 70% of the participants consumed at least one bar of chocolate per day [12].

The consumption of chocolate and cocoa in Kuwaiti population decreased substantially in 2021 due to COVID-19 pandemic. The precautionary measures during pandemic lead to closer of chocolate outlets like supermarkets, malls, and limited the consumption during wedding events and other celebrations [13]. However, during pandemic, several Gulf Cooperation Council (GCC) countries, including Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates (UAE)], reported increasing prevalence of obesity and overweight issues due to negative emotions that contributed towards overeating of comfort foods such as chocolate [14,15].

Conclusion

Although there are studies with coca and chocolate consumption, still the data from quantitative analysis and clinical trials are limited in these regions. This warrants due consideration and substantial efforts to obtain updated scientific information in order to confirm the real health benefits or risk from chocolate and cocoa product consumption among its population. The available data on the topic is not conclusive because studies on the topic are merely explorative and descriptive. There is dire need to conduct analytical studies with concrete objectives. This is critically important domain for research to investigate changing dietary preferences and finding their associations with health outcomes in today's rapidly changing world. Furthermore, specifically comparative studies should be conducted to quantify the impact of chocolate consumption and its benefits vs adverse effects of increased sugar intake accompanied with chocolate intake. WHO has reported global epidemic of obesity and metabolic derangements in young population that is also related to increased consumption of refined carbohydrates and reduced physical activity. The finding of the analytical studies will guide the authorities to develop marketing policies for the specific healthy snacks in the schools and universities.

Conflict of Interest

The authors declare that they have no competing interests.

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Volume 17 Issue 6 June 2022

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