

## Short Communication

# Healthy Food Promotion for Populations' Wellbeing: The Saudi National Initiative

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### ABSTRACT

Obesity, diabetes, and other significant consequences of unhealthy diet added financial and social burden to all countries. Therefore, active communities found that healthy diet promotion through governmental and non-governmental organizations can effectively raise the populations' level of awareness and provide access to healthy food options. This will eventually facilitate the adoption of healthy eating habits and significantly impact the

population's health.

A Healthy Food Promotion (HFP) national program will be conducted in Saudi Arabia as a part of the 2030 vision, which aims at offering a fulfilling and healthy life. The program will include designing and implementing several initiatives that aim at enhancing the eating habits and the wellbeing of the Saudi population.

### Introduction

A healthy diet provides all essential nutrients, fibers, minerals, and energy to the body in an adequate amount. To maintain a healthy life, total fat should not exceed 30% of total daily energy intake [1-3].

Saturated fats as (Palm oil, butter, and full cream milk) and trans-fats, which are manufactured commercially by the partial hydrogenation process and are found in (hydrogenated margarine, biscuits, and cakes) should be replaced by healthy unsaturated fats like (corn oil, sunflower oil, olives, avocado, peanuts, almonds, and walnuts). As per WHO guidelines, a population goal of sugar intake should be set to less than 10% of the total daily energy intake as a part of a healthy diet [2,4]. Moreover, proteins either from animal sources (milk, dairy products, eggs, meat, and meat organs) or plant sources (dried beans, peas, and lentils) should not exceed 15% of the total daily energy (0.8 grams/Kg body weight).

Carbohydrates, like all food containing sugar or starch, should represent around 45% to 60% of daily energy. Salt intake should be as low as 5 g per day to prevent hypertension and reduces the risk of cardiovascular events [5].

A healthy diet boosts healthy growth, improves cognitive development, and decreases the risk of obesity and its complications in children. It also helps pregnant women to produce healthy babies and protects all people from obesity and its harmful consequences, non-communicable diseases including diabetes, cancer, ischemic heart, hypertension, stroke, osteoporosis, and premature death [6]. Recently, some studies showed that a healthy diet could foster the immunity system against communicable diseases like COVID-19 [7,8].

Unfortunately, we are surrounded by barriers, which increase the risk of unhealthy food consumption because of the hectic modern lifestyle. These barriers include lack of time and competing priorities, the availability of high caloric fast food and tasty snacks, the cost of healthy food, the difficulty of changing

old unhealthy eating habits, and lack of knowledge about healthy food alternatives. Unhealthy eating habits are the main reasons behind the growing obesity and type 2 diabetes epidemics [9].

The prevalence of obesity was almost tripled all over the world between 1975 and 2016. About 39% of adults aged 18 years and over (39% of males and 40% of females) were overweight, and nearly 13% of the world's adult population (11% of males and 15% of females) were obese in 2016. Among children and adolescents worldwide, the prevalence of obesity was dramatically increased from 4% to 18% between 1975 and 2016. By 2019, nearly 50% of the obese children lived in Asian countries such as Saudi Arabia [10].

On the other hand, data collected for the adult population from 16 countries in the Eastern Mediterranean Region showed that the highest levels of overweight and obesity were found in Egypt, Bahrain, Jordan, Kuwait, Saudi Arabia, and the United Arab Emirates, which ranges between 74% - 86% [11]. In 2016, about 35% of the adults in Saudi Arabia were obese compared to 27.8% in 2007 [12].

Unhealthy diet consumption and obesity are the most leading causes of Type 2 diabetes and its complications, low quality of life, premature death, delayed tissue healing, frequent hospitalization due to uncontrolled blood glucose level, and repeated infections. Worldwide, the prevalence of diabetes increased among the adult population from 4.7% in 1980 to 8.5% in 2014 [13]. Before the year 1990, type 2 diabetes represented less than 4% of all cases of new-onset diabetes in children and adolescents in the United States. Recently, it represents about 45% of new-onset cases [14]. In Saudi Arabia, almost 18% of all adults have type-2 diabetes [15].

Many successful healthy eating promotion programs proved their effectiveness in changing people's perception, knowledge, and attitudes towards healthy food consumption. Some of these programs were implemented at the school level targeting the students, which raised their interest in the taste and quality of food by providing entertaining measures [16,17]. Other healthy food promotion programs were implemented at the community

level targeting specific subgroups of the population and proved successful in reducing unhealthy food intake [18-20].

## The Saudi Initiative

Dietary habits depend mainly on the availability and affordability of healthy food choices and individual choices. And accordingly, creating a healthy food environment and raising the awareness level towards healthy eating can enable people to efficiently adopt and maintain healthy dietary practices, which will significantly impact numerous health problems faced globally.

The Saudi Arabian 2030 vision aims at offering a fulfilling and healthy life. Several healthcare transformation projects are being conducted in Saudi Arabia to achieve this vision. These include a Model of Care (MoC) that activate people, create healthy communities, promote virtual care, and enhance primary, secondary, and tertiary care. The model of care includes 42 interventions addressing several healthcare-related aspects. One of these interventions is “Healthy Food Promotion” which is a nation-wide project that will cover all clusters in Saudi Arabia. A cluster is a network of healthcare providers comprising a large number of hospitals and primary health care centres in each region of Saudi Arabia. All clusters will design and implement healthy food promotion initiatives, compile best practices related to food awareness, and coordinate training and partnerships to improve the implementation of healthy food promotion efforts.

It was essential to explore and prioritize the most vital needs of the population in terms of the healthy food topics to be addressed and the population subgroups to be targeted in order to maximize the benefits of the healthy food promotion intervention. This was achieved by conducting a pre-workshop survey to gather the insights of subject matter experts and stakeholders about the Saudi population’s most significant needs to consider while implementing the program.

Reducing the available unhealthy food options was considered as the first priority, followed by increasing fruit and vegetable

intake, avoiding sugary drinks, limit sugar intake in general, managing calorie count, drinking sufficient amounts of water, reducing saturated fat and refined carbohydrate intake, limiting salt ingestion and finally reducing emotional eating respectively.

Data was also collected about the target audience groups that need healthy food promotion and will benefit the most from the program. The committee mentioned that the whole population should be targeted, especially adolescents, adults, children, the elderly, obese patients, patients with specific diseases with special eating considerations, students, and pregnant women.

The healthy food promotion program will be implemented through six main methods representing the roles of regulators, the government, and healthcare services providers. Regulators will be responsible for devising policies to enable access to healthy food choices, improve school nutrition, promote food safety, and guide healthy eating behaviours. In addition, regulators will ensure the health and safety of food through regular inspection and examination and issue dietary guidelines that emphasize the importance of creating a healthy eating pattern. The leading role of the government will include conducting “access programs” that enhance access to and continuously promote and deliver healthy food to specific target populations such as the underprivileged, school students, and the elderly. On the other hand, raising awareness towards healthy food choices and providing counseling services to modify patients’ lifestyle and support the treatment of certain illnesses will be the responsibility of healthcare providers.

Several healthy food promotion “quick win” initiatives were planned to achieve the program’s objectives. These interventions include educational videos on social media, online workshops/webinars, collaboration with grocery stores to promote healthier food choices, mobile applications, increasing healthy food offerings in workplaces and Universities, health menu options program, blender bike, and conducting school competitions to create the best healthy food plate. More details are provided in Table 1.

The advanced technology with smartphones and internet

**Table 1:** Examples of healthy food promotion “quick win” initiatives to be conducted in Saudi Arabia.

Initiative Description	HFP Topic(s)	Target Audience	HFP method(s)	Setting(s)
1. Educational videos on social media to create healthy recipes	<ul style="list-style-type: none"> <li>Reduce unhealthy food options</li> <li>Limit sugar and salt intake</li> </ul>	<ul style="list-style-type: none"> <li>All population segments</li> </ul>	<ul style="list-style-type: none"> <li>Awareness campaigns</li> </ul>	<ul style="list-style-type: none"> <li>Community</li> </ul>
2. Onlineworkshops/webinars to educate about healthy food options	<ul style="list-style-type: none"> <li>Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>All population segments</li> </ul>	<ul style="list-style-type: none"> <li>Awareness campaign</li> </ul>	<ul style="list-style-type: none"> <li>Community</li> </ul>
3. Collaborate with grocery stores to promote healthier food choices ahead of unhealthy choices	<ul style="list-style-type: none"> <li>Reduce unhealthy food options</li> <li>Limiting sugar intake</li> </ul>	<ul style="list-style-type: none"> <li>All population segments</li> </ul>	<ul style="list-style-type: none"> <li>Awareness campaign</li> </ul>	<ul style="list-style-type: none"> <li>Community</li> </ul>
4. Social media campaign that associates fruits and vegetables with desirable traits (healthy skin, etc.)	<ul style="list-style-type: none"> <li>Increase fruit and vegetable intake</li> </ul>	<ul style="list-style-type: none"> <li>All population segments</li> </ul>	<ul style="list-style-type: none"> <li>Awareness campaign</li> </ul>	<ul style="list-style-type: none"> <li>Community</li> </ul>
5. Promote mobile applications that assist in calorie count, healthy food recipes, reminds to drink water	<ul style="list-style-type: none"> <li>Limit sugar and salt intake</li> <li>Manage calorie intake</li> <li>Drink sufficient amounts of water</li> </ul>	<ul style="list-style-type: none"> <li>All population segments</li> </ul>	<ul style="list-style-type: none"> <li>Awareness campaigns</li> </ul>	<ul style="list-style-type: none"> <li>Community</li> </ul>
6. Social media campaign (tweets for e.g.) that educates on the concept of food exchange	<ul style="list-style-type: none"> <li>Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>All population segments</li> </ul>	<ul style="list-style-type: none"> <li>Awareness campaigns</li> </ul>	<ul style="list-style-type: none"> <li>Community</li> </ul>
7. Increase ready to eat fruit and vegetables offerings	<ul style="list-style-type: none"> <li>Increase fruit and vegetable intake</li> </ul>	<ul style="list-style-type: none"> <li>All population segments</li> </ul>	<ul style="list-style-type: none"> <li>Access program</li> </ul>	<ul style="list-style-type: none"> <li>Grocery stores</li> <li>Restaurants</li> <li>Malls</li> </ul>

8. Social media campaign with health celebrities educating about the importance of healthy diet	<ul style="list-style-type: none"> <li>• Limit sugar and salt intake</li> <li>• Manage calorie intake</li> <li>• Reduce refined carbohydrate intake</li> </ul>	<ul style="list-style-type: none"> <li>• All population segments</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness campaigns</li> </ul>	<ul style="list-style-type: none"> <li>• Community</li> </ul>
9. Limiting portion sizes for unhealthy food options and providing wider variety of healthy meal sizes	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• All population segments</li> </ul>	<ul style="list-style-type: none"> <li>• Policy</li> </ul>	<ul style="list-style-type: none"> <li>• Grocery stores</li> <li>• Restaurants</li> </ul>
10. Increase the healthy food offerings in the workplace cafeterias	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• Adults</li> </ul>	<ul style="list-style-type: none"> <li>• Access program</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace</li> </ul>
11. Posters and flyers that highlight the risks associated with high salt intake	<ul style="list-style-type: none"> <li>• Limit salt intake</li> </ul>	<ul style="list-style-type: none"> <li>• Adults</li> <li>• Elderly</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness campaigns</li> </ul>	<ul style="list-style-type: none"> <li>• Community</li> <li>• Primary Healthcare facilities</li> </ul>
12. Prevent the sales of unhealthy snacks in schools	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• Children</li> <li>• Adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Policy</li> </ul>	<ul style="list-style-type: none"> <li>• Schools</li> </ul>
13. Healthy school competition: Schools compete to identify the healthiest school in the cluster	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• Children</li> <li>• Adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness campaign</li> <li>• Competition</li> </ul>	<ul style="list-style-type: none"> <li>• Schools</li> </ul>
14. Student councilor or school dietitian program to educate children on healthy eating and managing calories	<ul style="list-style-type: none"> <li>• Limit sugar and salt intake</li> <li>• Manage calorie intake</li> <li>• Drink sufficient amounts of water</li> </ul>	<ul style="list-style-type: none"> <li>• Children</li> <li>• Adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Counselling</li> </ul>	<ul style="list-style-type: none"> <li>• Schools</li> </ul>
15. Healthy food options or healthy lunchbox in school cafeterias	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• Children</li> <li>• Adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Access program</li> </ul>	<ul style="list-style-type: none"> <li>• Schools</li> </ul>
16. Animated video that educates about water consumption, importance and body composition	<ul style="list-style-type: none"> <li>• Drink sufficient amounts of water</li> </ul>	<ul style="list-style-type: none"> <li>• Children</li> <li>• Adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness campaign</li> </ul>	<ul style="list-style-type: none"> <li>• Community</li> </ul>
17. Health Menu Options Program A unified logo is added to specific menu items in all restaurant to indicate that this menu item has been assessed by a health professional and is: high in dietary fiber, low in salt and low in saturated fats	<ul style="list-style-type: none"> <li>• Limit sugar and salt intake</li> <li>• Increase dietary fiber intake</li> <li>• Limit saturated fats intake</li> </ul>	<ul style="list-style-type: none"> <li>• All population segments</li> </ul>	<ul style="list-style-type: none"> <li>• Inspection</li> <li>• Access program</li> </ul>	<ul style="list-style-type: none"> <li>• Restaurants</li> <li>• Schools and Universities</li> </ul>
18. The Blender Bike: Children and adolescents are encouraged to ride a bike that is connected to a blender to make smoothie while being informed about the importance of eating fruits and vegetables	<ul style="list-style-type: none"> <li>• Increase dietary fiber intake</li> <li>• Increase fruit and vegetable intake</li> </ul>	<ul style="list-style-type: none"> <li>• Children</li> <li>• Adolescents</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness campaigns</li> <li>• Access programs</li> </ul>	<ul style="list-style-type: none"> <li>• Malls</li> <li>• Schools and universities</li> </ul>
19. Healthy food messages: Comics on inside covers of school books and posters on class walls	<ul style="list-style-type: none"> <li>• Limit sugar and salt intake</li> <li>• Increase fruits and vegetables intake</li> <li>• Increase dietary fiber intake</li> </ul>	<ul style="list-style-type: none"> <li>• Children</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Schools</li> </ul>
20. NGOs to form agreements with restaurants to allow catering of healthy sandwiches, salads and sugar-free juices in workplaces and events. In return, the name of the restaurant will be added to the website of the NGO as a promotion	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• Adults</li> </ul>	<ul style="list-style-type: none"> <li>• Access</li> </ul>	<ul style="list-style-type: none"> <li>• Workplaces</li> <li>• Conferences</li> <li>• Outdoor events</li> </ul>
21. Counselling booths in PHCs to inform pregnant and nursing women about healthy food options and benefits, and to provide samples of healthy foods	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> <li>• Increase awareness about healthy food options and benefits</li> </ul>	<ul style="list-style-type: none"> <li>• Pregnant and nursing women</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness</li> <li>• Access</li> </ul>	<ul style="list-style-type: none"> <li>• PHCs</li> <li>• Obstetrics and Gynecology Clinics</li> </ul>
22. Distribute samples of tasty salads in supermarkets with a flyer showing its ingredients, with recipes for other salads	<ul style="list-style-type: none"> <li>• Increase fruits and vegetables intake</li> <li>• Increase dietary fiber intake</li> </ul>	<ul style="list-style-type: none"> <li>• All population segments</li> </ul>	<ul style="list-style-type: none"> <li>• Access</li> <li>• Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Supermarkets</li> <li>• Grocery stores</li> <li>• Malls</li> </ul>
23. Awareness campaigns about emotional eating including online psychological guidance sessions and awareness lectures, Moreover, a hotline number provides consultation about emotional eating and how to overcome it	<ul style="list-style-type: none"> <li>• Reduce emotional eating</li> </ul>	<ul style="list-style-type: none"> <li>• All population segments</li> </ul>	<ul style="list-style-type: none"> <li>• Counselling</li> <li>• Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Schools</li> <li>• Universities</li> <li>• Malls</li> <li>• Online</li> </ul>
24. Mandate cafeterias (not restaurants) to illustrate the calorie count of menu items	<ul style="list-style-type: none"> <li>• Manage calorie count</li> </ul>	<ul style="list-style-type: none"> <li>• All population segments</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Universities</li> <li>• Sport clubs</li> </ul>

25. Make an illustration showing the amount of salt or sugar included in commonly consumed foods (e.g. soft drinks, energy drinks, fast food sandwiches) to alert the consumers about the contents of their foods	<ul style="list-style-type: none"> <li>• Limit sugar and salt intake</li> </ul>	<ul style="list-style-type: none"> <li>• All population segments</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Workplaces</li> <li>• Universities</li> <li>• Malls</li> <li>• Schools</li> </ul>
26. 7-Day Heart-Healthy Meal Plan: Develop and promote a diet plan including heart-friendly foods, along with other tips to protect the heart and tailored online (or over the phone) counselling sessions upon request	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• Adults</li> <li>• Adolescents</li> <li>• Patients at risk of developing cardiovascular diseases (e.g. diabetic patients)</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness</li> <li>• Access</li> <li>• Counselling</li> </ul>	<ul style="list-style-type: none"> <li>• Workplaces</li> <li>• Universities</li> <li>• PHCs</li> </ul>
27. A school competition to create the best healthy food plate prepared by the child himself under supervision/ assistance of his parents Food preparation should be video recorded for the competition and the prize can be a bicycle or a health club annual membership	<ul style="list-style-type: none"> <li>• Reduce unhealthy food options</li> </ul>	<ul style="list-style-type: none"> <li>• School children</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness</li> </ul>	<ul style="list-style-type: none"> <li>• Schools</li> </ul>

access facilitates healthy diet promotions, especially during the pandemic where face to face communication and gatherings are strictly prohibited.

The project team's performance will be continuously monitored according to preset KPIs, and the project's outcome will be measured at specific intervals. We expect a significant impact on the healthy food promotion program on the Saudi population's health and wellbeing. Conducting similar projects in other countries and making partnerships would be of great value to enhance all populations' health and quality of life.

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