

# FOOD DOME DIETARY GUIDELINES: MY FULBRIGHT RESEARCH ON MAPPING OBESITY IN THE GULF REGION

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## ABSTRACT

My Fulbright research at Arabian Gulf University in Bahrain was mixed-method research that focused on a better understanding of the relationship between Gulf medical students' knowledge and attitudes about Food Dome dietary guidelines (FDDG). In this article, I share the qualitative findings of my research. Medical students were willing and eager to learn more about the FDDG. However, some of the main challenges were resource availability, cooking options, taste, culture, physical environment, time, and class pressure.

**Keywords:** Food Dome dietary guidelines • Gulf • Medical Students • Knowledge • Attitude • Behavior



The transition to university is recognized as a significant development period, marked by exploring one's identity and potential and ability to fit into social and spatial environments. Students' increasing autonomy and independence entail significant life changes and may be accompanied by less healthy behaviors, such as unhealthy food choices. Further global evidence from the past three decades suggests that students are increasingly choosing unhealthy foods due to a lack of knowledge and positive attitudes towards unhealthy foods, where taste and pleasure are some of the principal considerations in food choices.

Consistent with global trends, the burden of overweight, obesity, and obesity-related non-communicable diseases in the Gulf Cooperation Council (GCC) countries has increased significantly over the past three decades, reaching epidemic status. Since more than half of the population in the GCC countries is under 30 years of age, regional studies have shown that students are the most affected groups in terms of overweight and obesity. The body of evidence on the determinants and factors associated with obesity among students in GCC countries suggests that examining students' knowledge, attitudes and behavior regarding food choices and physical activity patterns is critical. However, thus far, most studies conducted in the Gulf countries have focused on students' daily habits, behavior, and prevalence of overweight and obesity, rather than assessing their nutrition knowledge and the attitudes that influence their food choices.

Food-based dietary guidelines (FBDG) attempt to guide communities about food, diet, and health in a specific, culturally appropriate way and offer feasible recommendations for various foods, nutrition, and health policies and programs to improve population health and nutrition behavior.

Analysis of national and regional FBDGs of 85 countries showed that the use of FBDGs might be associated with a reduction in premature mortality at 15% (13% to 16%) on average. In 2012, the Arab Center for Nutrition developed the Food Dome dietary guidelines (FDDG) for the Middle East and North Africa (MENA) region to prevent overnutrition, malnutrition, and micronutrient deficiencies, and promote physical activity (PA). However, there is no evidence to suggest that the FDDG was scientifically promoted or distributed to the general public through nationwide campaigns or by other means. While most authors in the Gulf writing on this topic tend to conclude their articles by advising students to follow national dietary guidelines, none of the studies conducted in any of the Gulf states has attempted to explore students' knowledge, attitudes, and behaviors in relation to national dietary guidelines or health nutrition.

Having grown up and been educated in the United States, one of the countries with the highest obesity rate in the world, I had the opportunity to observe the food choices of my peers, which led me to understand that there are many complex factors influencing people's attitudes and food choices. This is how I became interested in factors influencing Gulf students' food choices, and, thus, the aim of my Fulbright research was developed. This mixed-method research as part of my Fulbright Research at Arabian Gulf University (AGU) is the first to explore knowledge, attitudes, and behaviors in relation to the FDDG among Gulf university students. This study was a unique contribution not only to Bahrain, where the research was completed but also laid the foundation for future research in the rest of the Gulf countries, as well as making a significant contribution to mapping obesity in the region.

### **FOOD DOME – KNOWLEDGE, ATTITUDES, BEHAVIOR**

In this article, I share the qualitative components of my research, which is unique in that it allows the voices of medical students from the Gulf region to be heard, recorded, and published. Focus groups among Gulf medical students allowed them to qualify, clarify, and build a discussion of each other's responses, thereby providing me with an opportunity to immerse myself in the students' daily lives and explore the barriers and facilitators to adopting healthy or unhealthy lifestyles.

In essence, Gulf medical students drew a clear distinction between their pre-medical and medical periods, whereby during their pre-medical years, most students led healthy lifestyles and spent most of their time with their families. However, once they became students or, as they said, "medical periods," most respondents agreed that they all started to follow the same daily routine, which included waking up at the same time, running to classes or hospital rounds, eating, and studying, with the time and workload of classes being decisive factors for the rest of the day's activities, including meals.

## FOOD DOME VS. FOOD PYRAMID

When respondents were asked to share their perception of a healthy lifestyle, most agreed that a healthy lifestyle is a balance between nutrition, physical activity, sleep, mental health, and avoiding unhealthy habits such as smoking. However, one participant suggested that there is no clear answer to what constitutes a healthy lifestyle. He also emphasized that a healthy lifestyle may vary from person to person and may not have a significant impact on their health.

Interestingly, this participant went on to suggest that even doctors have not come to a clear definition of a healthy lifestyle.

*“I think there was no straight answer to your question. Because it depends on the person himself, because as you can see a lot of doctors or specialists and nutrition is what they agree and they disagree to each other (GB, P3, Male).”*

These arguments led to a discussion about the Food Dome, designed specifically for the MENA region. It turned out that the respondents knew about the Food Pyramid, but most lacked knowledge about the Food Dome. Thus, Gulf medical students were well informed about the Food Pyramid and its components but not the Food Dome. They even questioned the choice of shape, i.e., a dome.

*“Is it dome because for Arab countries? (GA, P5, Female)”*

Only one student was aware of Food Dome as he had seen the FDDG earlier during a conference. However, the dome had been presented there in the form of a pyramid.

*“So I’ve seen this. I’ve seen I’ve seen this in kind of the conferences before, but not any an exact dome, but they were talking about that we have a certain Arab food pyramid. So it was more of a pyramid than a dome, but with the same amount of servings (GB, P4, Male).”*

## PROS AND CONS OF FOOD DOME

Gulf medical students perceived the FDDG as a clear and visually appealing conveyance of information through images. They also noted that it is common knowledge that food should not be shared equally, but rather according to the needs of the individual. However, as respondents explored FDDG, questions arose about food types and portion sizes, with a particular focus on protein and carbohydrates. They argued that Food Dome should include more protein as the basis of a healthy diet, rather than large amounts of carbohydrates. One student noted that the Gulf region already has a problem with insulin resistance, and consuming 11 servings of carbohydrates daily could worsen the situation.

*“I was surprised about how much carbs like this six to 11 servings. Is that per day? Yeah, I think I don’t know that. It’s surprises (GA, P3, Female).”*

*“Yeah, it’s really reciprocating how the data is in the Arab regions (GB, P2, Male).”*

Only a few respondents who delved into the FDDG and its components argued that everything in the Food Dome is culturally and regionally appropriate, and when looking at the variety of grains or cereals these products are an integral part of the daily diet of the Gulf States. They also noted that most of the food is grain-based, and in terms of protein servings, it is consistent with the daily diet of the region.

*“Initially I thought it is a lot. But for example when seeing of cereals he means one slice of bread I can see why he make most of it [carbs] (GA, P7, Female).”*

*“We do consume proteins for breakfast, evening breakfast, lunch and dinners (GB, P4, Male).”*

When the subsequent discussion focused on changes that the Gulf medical students believed could improve FDDG, all respondents agreed on the need to include fluids, i.e. water, and how often it should be consumed. Gulf medical students expressed concerns about physical activity and time allocated to age groups, stating that the recommendations do not match the actual capabilities of children or adults in employment. They noted that there are many reasons why people in the region avoid physical activity, including hot weather, with most of the region’s population instead choosing to sit inside and consume the same amount of food.

*“that’s when we see the issues [health] start to appear as well (GB, P2, Male).”*

The respondents argued that the number of minutes for adults is not enough for energy balance and that more time should be allocated. One of the students also noted that housewives exercise more than 30 minutes a day, especially if they do not have helpers in the house: cleaning, cooking, walking, picking up children. This was followed by an interesting and thought-provoking argument:

*“Just being at home and cooking, cleaning and going up and down doesn’t mean it’s enough physical activity they need to at least some 30-minute jog for instance, or some or walk (GB, P2, Male).”*

*“Yeah, they do. They do. This is considered heavy activity. Have you tried doing the laundry of a full house? (GB, P4, Male).”*

These comments led to a discussion of modifiable and non-modifiable factors. Students emphasized that regional culture and weather have a significant impact on people's behavior, in most of the cases hindering compliance with the FDDG. However, they noted that there are also modifiable factors that can promote compliance with the FDDG, such as education from an early age. The discussion thus turned to how to spread knowledge about the Food Dome and how to educate people.

### **FOOD DOME EDUCATION**

Gulf medical students shared their thoughts on the best possible ways to educate about FDDG. Events where healthcare facilities, schools, or restaurants come together to discuss the dangers of unhealthy foods or how much of a certain product to consume, were among the leading suggestions. They emphasized that these educational events should be free so that anyone can participate. Other suggestions included that food companies list the number of servings of each food, protein, and carbohydrate on their labels. They believed that this approach would encourage people to learn more about nutrition.

*"I would like to add that not everyone knows how to read those labels. And they need to put it on the front the packaging how much each serving has for example four servings of protein (GA, P3, Female)."*

Most respondents agreed that Food Dome education should start at early years of education. They believed that if the Gulf region was taught about the Food Dome from an early age instead of the Food Pyramid, their food choices would likely be much healthier as adults, i.e., in line with local foods. They further argued that they were taught the Food Pyramid, along with recommendations created for the American population and their region, and it can be suggested that they, or at least some of them, were following the wrong recommendations all the time.

*"Go to school and teach children while they are young and they will be more convinced what is wrong or right. In adult it is harder to change habits (GA, P3, Female)."*

The respondents suggested to stop TV or online campaigns on FDDG as they no longer have any impact and to start live actions in which supermarkets, government and researchers work together to promote healthier food using healthier ingredients. In a discussion about healthier ingredients, one student emphasized and others supported that:

*"I think one other thing is that unfortunately, in our region, sometimes healthier options are more expensive. And that means that people will not be encouraged as compared to non healthy options, which are much cheaper and take less time (GB, P6, Female)."*

The concluding remark was expressed as follows:

*“What we need in our region is to educate people about how to eat the same or how to get the same taste of the food you like, or how to make the same traditional food you like in a healthy way, that could be a good idea (GB, P4, Male).”*

## CONCLUSION

My invaluable experience as a Fulbright Scholar allowed me to practice reflexivity as a hallmark of excellent research, allowing me to reflect again on myself as a researcher; on the cultural, historical, linguistic, political, and other forces that shape everything in the research, and on the social interactions between researcher [me] and participants. Medical students from the Gulf region, as future healthcare providers, were willing and eager to receive education to learn more about the FDDG and to rethink their food choices. However, some of the main challenges reported by the students in adopting the FDDG recommendations were culturally customary diet, price and availability of certain food groups. These arguments were echoed in global evidence, where the main barriers to following healthy lifestyles and dietary recommendations were social and cultural factors rather than lack of skills or knowledge about healthy eating.

*“My invaluable experience as a Fulbright Scholar allowed me to practice reflexivity as a hallmark of excellent research.”*

Students' food choices are often based on resource availability, cooking options, food taste and culture, physical environment and, perhaps most importantly, time, class pressure, and food prices. I believe that this research has created a new direction and a set of hypotheses that should be explored in more detail.

## FURTHER READING

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Alex Woodman Conducting Qualitative Interview  
with AGU Students

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**BIOGRAPHY**

Alexander Woodman is a professor of preventive medicine and public health. He received his undergraduate and graduate degrees from UCLA, USC, and Harvard Medical School. His primary research focuses on advancing global health, medical education and practice. In his research, Alexander merges epidemiological data with state-of-the-art laboratory technologies to find new ways to understand a variety of health conditions impacting the daily life of the public. He can be contacted at [alexwoodman.ucla@gmail.com](mailto:alexwoodman.ucla@gmail.com).

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