

# Overweight and Obesity in the Arab Countries: The Need for Action

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Bahrain, 2007**

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## **INTRODUCTION**

The prevalence of obesity is increasing worldwide, however the proportion varies from country to country and within geographical areas in the country. Change in lifestyle, dietary habits, physical activity, social and cultural environment are associated with the occurrence of obesity (WHO, 1998). It is well documented that morbidity and mortality rates increase with increase in body weight. Many chronic non-communicable diseases are positively associated with obesity, especially type 2 diabetes mellitus, hypertension, some forms of cancer and cardiovascular diseases (WHO, 2003). These diseases are the main causes of illness and deaths in most Arab countries. Therefore, prevention and control of obesity will play an important role in reducing the risk for chronic diseases. This paper highlights the current situation of obesity in the Arab countries and factors contributing to its prevalence.

### **Current Status of Obesity**

Several studies were carried out to determine overweight and obesity in this Region. Most of these studies used the body mass index (BMI) as an indicator for obesity, and very few of them used skinfold measurement. It was concluded that overweight and obesity are problem of concern not only among adults, but also among children and adolescents in this Region (Musaiger, 2003a).

De Onis and Blössner (2000) reviewed the prevalence of overweight among preschool children (0-5 years) in 94 countries. The global prevalence of overweight was 3.3%, however, the Arab countries showed the highest prevalence of overweight with a rate ranged from 3.1% to 9%. The prevalence of

overweight continues to increase in the region during school age and adolescent stages. WHO (1998) reported that body mass index begins to increase rapidly after a period of reduced adiposity during the preschool years. During adolescence the children experienced an increase in body fat accumulation often associated with irregular meals, changed food habits and inactivity. In Kuwait, for example, Al-Mousa and Parkash (2000) found that 4.7% and 6.7% of males and females preschool children (0-5 years) were obese, respectively. The proportion increased to 8.1% and 8.8% for school children aged 6-9 years, and to 36.8% and 35.9% for those aged 10-13 years, respectively.

Excluding poor countries in the Region (Afghanistan, Somali, Djibouti, Sudan, Mauritania and Yemen) the prevalence of overweight and obesity among school children aged 6 to 10 years ranged from 12% to 25%, while among adolescents (11-18 years) ranged from 15% to 45%, using BMI as a criterion for obesity. Among adults ( $\geq 19$  years) the prevalence of obesity vary widely from country to country. Using  $BMI \geq 25$ , the proportion of obesity among men ranged from 30% to 60%, while that among women ranged from 35% to 75%. It is worth mentioning that some of studies reviewed were not on a national base, however, they provide useful data on trend of obesity (Musaiger, 2003b). A review of 39 surveys used from 28 developing countries to determine obesity among women, Martorell et al (2000) reported that women in Egypt have the highest proportion of overweight among all the 28 countries (31.7%), as well as the highest proportion of obesity (20.1%).

**Table 1: Prevalence of Overweight and Obesity in the Arab Countries**

Age group	% of Overweight and Obesity
Preschool children (<6 yr)	4 - 8
School children (6 – 10 yr)	12 - 25
Adolescents (11 – 18 yr)	25 - 45
<b><u>Adults</u></b>	
Men	30 - 60
Women	35 - 75

Musaiger (2002)

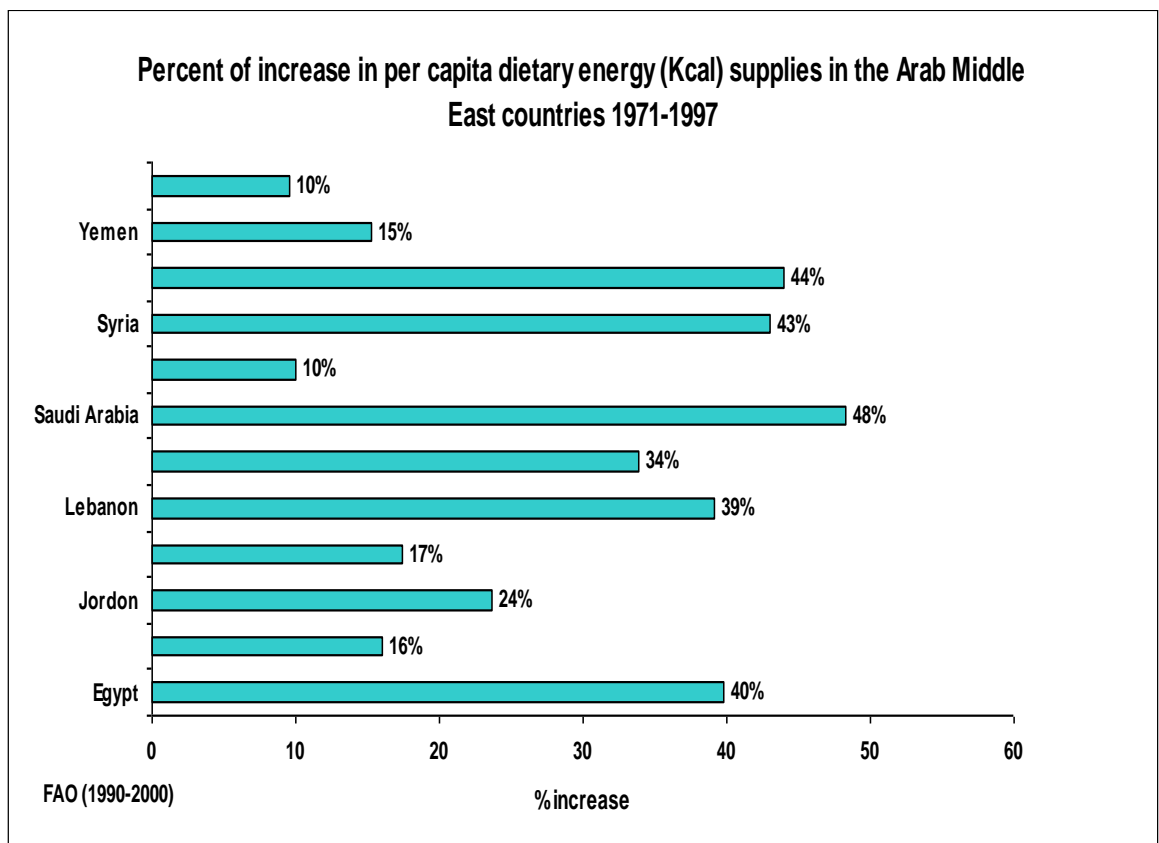
## **FACTORS ASSOCIATED WITH OBESITY IN THE ARAB COUNTRIES**

During the past decade an increase emphasis was carried out to find out factors associated with obesity, especially in Saudi Arabia, Bahrain, Kuwait, Egypt, Lebanon and Tunisia (Musaiger and Mistry, 2000; Musaiger, 2003a and Sabei et al, 2003). Nevertheless, in depth studies on this aspect are few, which create the need for establishing a well designed community-based study in the region.

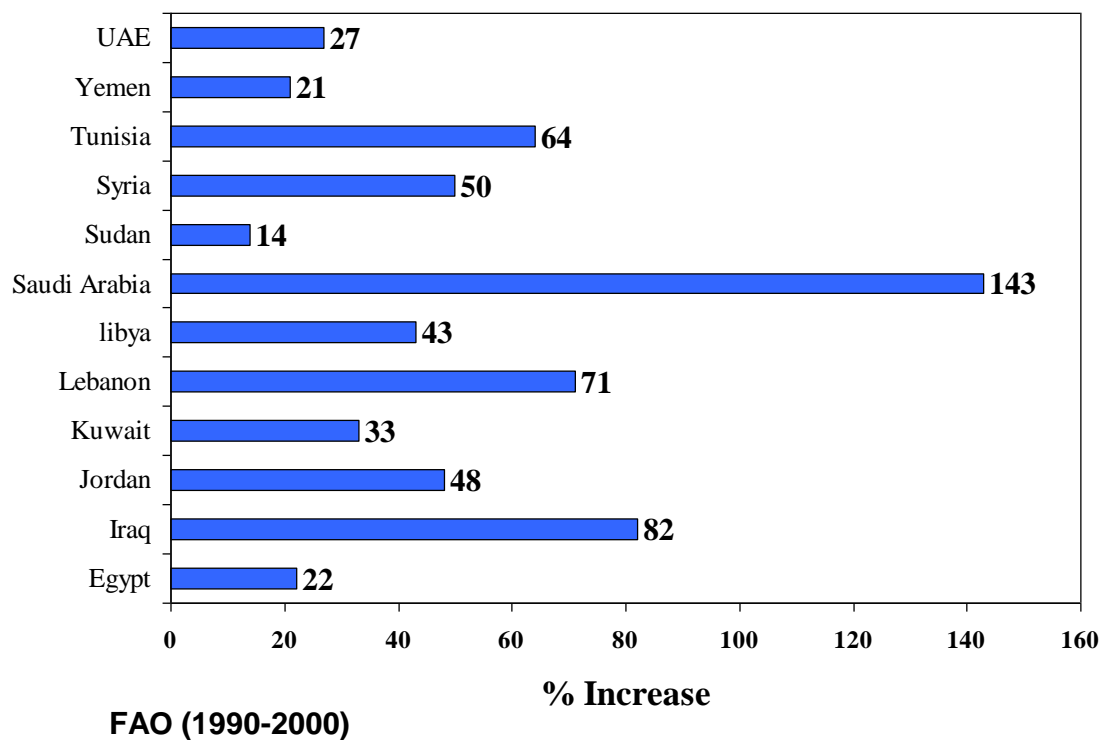
### ***Change in the food consumption pattern***

Food consumption patterns and dietary habits in the Arab countries have changed markedly during the past four decades. There has been an increase in per capita energy and fat intake in all the countries. Data from food balance sheet (FAO, 2000) showed an increase in calories supplies during 1971-2000 in these countries, and a high percentage of these calories came from animal foods. The daily per capita fat supplies showed impressive increases, the percent of increase ranged from 13.6% in Sudan to 143% in Saudi Arabia, during same period

(Musaiger, 2002). It is highly acceptable, that the high consumption of foods rich in fat and calories and the sedentary lifestyle among most communities in this region played an important role in the rise of obesity. This is particularly true with great shift from traditional foods to more westernized foods in these countries.



**Fig. 2: Percent of increase in per capita dietary fat (grams) supplies in the Arab Middle East Countries 1971-1997**



### ***Skipping breakfast***

Skipping breakfast or intake of poor nutritional value breakfast is common among school children. Recent studies showed that people who consume breakfast meal regularly were less likely to obese and to have diabetes than those who skipped breakfast. In general, the percentage of skipping breakfast is higher among girls than boys, and increased with age. In the UAE, it was reported that 28% of boys aged 6-7 years skipped their breakfast compared to 37% of girls at same age. In Bahrain, about 42% and 59% of school boys and girls aged 10-15 years skipped their breakfast, respectively. In Saudi Arabia, 74% of school girls aged 12-16 years skipped or irregularly consume breakfast (Musaiger, 2007).

### ***Snacking Habits***

Baseline data on the kinds of foods consumed between meals (snacks) and how these foods contribute to nutrient intake in relation to the overall diet is essential for school meal programme. In Bahrain, it was found that about 22.3% and 17.6% of adolescent girls aged 11-15 and 16+ years, respectively did not eat any snack between breakfast and lunch (Musaiger, 2003b).

Carbonated beverages, cheese, un-carbonated drinks, meal and liver sandwiches and falafel (fried broad bean mixed with spices) were the foods commonly consumed at morning snack by adolescent girls. The consumption of carbonated beverages increased steeply with age. Of 11-15 year old girls, 36% consumed carbonated beverages compared to 66% among those more than 15 years old. In contrast younger girls were more likely to consume un-carbonated canned drinks than older girls (Musaiger, 2003b).

### ***Socio-demographic factors***

Unlike western countries, obesity in the Arab countries is more prevalent among women, urban areas and in high social class. In Jordan, for example the prevalence of obesity was 56% in urban area compared to 44% in rural areas. Similar trends were found in Egypt, Morocco, Oman, Tunisia, Iran and Turkey. Lebanon was an exception as obesity was more prevalent among rural than urban women. Interestingly, obesity occurred more among unemployed than employed women. In Kuwait, the percentage of obesity in unemployed women was 47% compared to 34% in employed women. In Saudi Arabia, the proportions were



79% and 53%, and that in Tunisia the percentages were 24% and 15%, respectively (Musaiger, 2003c).

In general, obesity in this Region was found to be more prevalent in young people (30-50 years), with higher education, currently married, female, unemployed, those who watched television more than 2 hours per day, those who consume fresh fruit less than 3 times / week and those who owned car(s) (Musaiger and Mistry, 2000, Musaiger, 2003b).

### ***Inactivity and Patterns of Physical Activity***

Change in lifestyle and socio-economic status in this region have a significant effect on physical activity. With availability of cars, electric home appliances and more involvement in office work, the life has become more sedentary, and the pattern of practising exercise has diminished steeply, in most countries of the Region. In Egypt, it was found that practising exercise is the activity least done during leisure time of a typical day. Only 2% of adults (20-70 years) were reported as practising exercise in a typical day, 8.5% practising during the weekend and 2.5% during the annual leave (Yasin et al, 1998). In Saudi Arabia, about 53.5% of Saudi men aged 19 years and older were totally physically inactive, and another 27.5% were irregularly active, and only 19% were active on a regular bases. Physical activity was lower among those who were married, work in private sectors, working two shifts, less educated or who had only one day off during the week. Time constraint seems to be the major contributing factor to inactivity, while maintaining health and losing weight were the most

important reason for physically active among Saudi men (Al-Refaei and Al-Hazza, 2001).

### ***Socio-Cultural and Economic Barriers to Practicing Physical Activity***

Most studies in the Arab countries focused on barriers to practising physical activity in women. This maybe due to difficulties faced by females in practising exercise in the Arab culture, as males in general have more freedom and places to practise sport and other recreational activities. We reviewed 10 studies investigating barriers to practising physical activity and sport in six Arab countries (Egypt, Jordan, Bahrain, Qatar, Sudan and Iraq). The main findings are summarized in Table 2. The barriers can be divided into five categories: economic, social, psychological, cultural and environmental. Women's commitments to work/home, physiological conditions (pregnancy and lactation) and lack of places and facilities for women to practise exercise were the main barriers perceived by the studied women.

A detailed study on the main barriers to practising exercise and other recreational activities among 310 women in Bahrain was carried out by Al-Amer (1996). The main social barriers perceived by women were: work/home commitments (49%) and care of children (36%). However, 24% of women perceived that the negative attitude by family members toward women practising exercise/sport is also considered to be a barrier for them. It is true that in some Arab cultures, girls and women are not allowed by family members to practise sport or exercise out-doors, or in the same place with boys and men. Therefore, 79% of women perceived that the unavailability of women's clubs is the main factor for not

practising exercise. They believe that there is sex discrimination, as sport and other recreational facilities are always provided for males (67%), and they found difficulty in practising any physical activity in the presence of men (66%). Transportation difficulties (57%) and expensive fees (44%) were the main economic barriers to Bahraini women practising exercise.

**Table 2: Main barriers to practicing physical activity among women in the Arab countries (review of 10 studies)**

1. Economic barriers	Lack of facilities, lack of training places, lack of women's clubs, transportation difficulty, expensive fees
2. Social barriers	Women's duties (studying, work, household, husband and children), lack of time
3. Psychological barriers	Lack of motivation, lack of encouragement by family/husband etc
4. Cultural barriers	Beliefs and attitudes, discrimination against women
5. Environmental barriers	Unsuitable weather, health and physiological conditions (pregnancy)
No. of studies reviewed: 3 in Egypt, 2 in Iraq, 2 in Bahrain and one each in Jordan, Qatar and Sudan	

Many of the above barriers were mentioned in studies in developed countries (EC, 1999). The European Commission Survey on physical activity in 15 countries showed that work/study commitments, not being the sporty type, looking after children, expense, illness, lack of facilities and old age are the main barriers to practising physical activity by both men and women (EC, 1999).

In a small scale study in women, Hasanane et al (1992) asked the women to suggest solutions to promote physical activity among females. “ Establish a

women's club" was the main suggestion (45%), followed by "provide suitable places for women to practise exercise" (31%), "encourage and train the women trainers" (27%), "establish women's sport team's" (26%), increase the awareness of the public through the mass media (24%) and organize course and give lectures on women's sport" (18%).

### ***Television and Obesity***

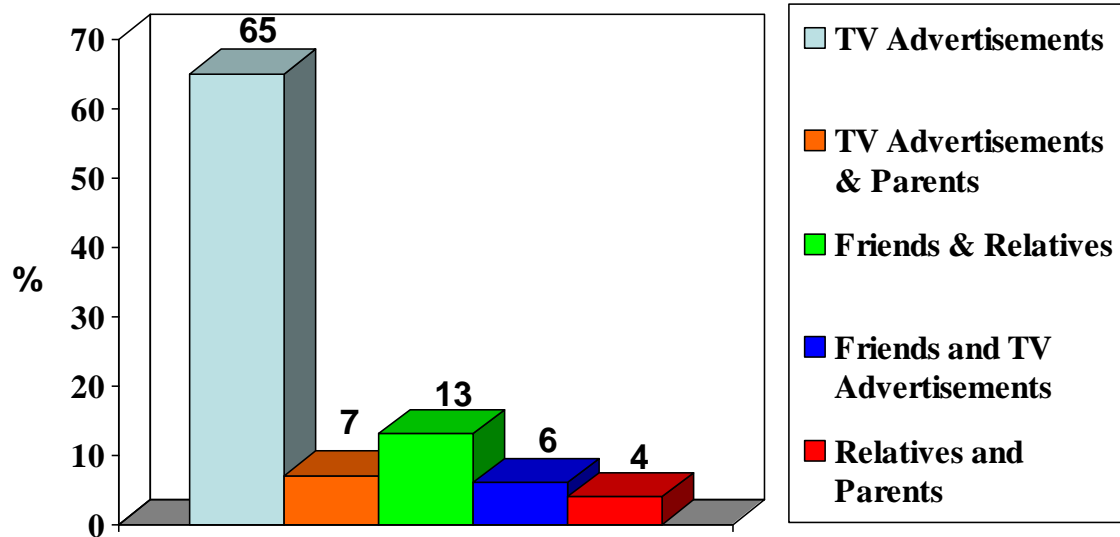
Many studies suggested that watching television is associated with inactivity and obesity (Taveras et al., 2006; Francis and Birch, 2006). In the United Arab Emirates, Musaiger et al., (2004) found that the relative risk to be obese was 1.3 for male university students who watched television for more than 4 hours a day compared to those who watched television for less than 4 hours a day. However, Prentice and Jebb (2005) found that among adolescents, television viewing and obesity are separate entities and are not associated.

In Saudi Arabia, about 18% of school children (6-18 years) spend more than 2 hours/day watching television, and as the age of children increases the proportion of children who watch television rises. The percentage was 15% for children aged less than 9 years and increased to 26% for children aged over 17 years (Al-Sumai et al, 1997). In Bahrain, 77% of men and 79% of women aged 30-79 years watched television daily (Musaiger and Al-Roomi 1997). In Egypt, 23% of adults (20-70 years) watched television in the leisure time of a typical day. The proportion is higher among women (48%) than men (15%). However, during the weekend, the percentage of Egyptians who watched television increased dramatically to 68% and 82% for men and women respectively (Yasin et al,

1998). In Qatar, it was found that 19% of men aged more than 19 years watched television for more than 5 hours a day compared to 41% of women (Musaiger and Al-Mulla, 1998).

The type and quantity of foods eaten while watching television may be a confounding factor for the occurrence of obesity. The habit of eating food while watching television is widespread in the Arab countries. For example, 31% of men and 54% of women in Egypt watched television while having lunch, and the corresponding proportions for supper were even higher, 72% and 85% for men and women, respectively (Yasin et al., 1998). In the United Arab Emirates, Musaiger (2007) showed that 53% of secondary school girls frequently eat food while watching television, 41% sometimes and only 6% did not eat any food. The main types of food eaten while watching television were chocolates and sweets (21%), potato chips and puffs (19%), nuts (12%) and carbonated beverages (10%). These foods contain a high amount of calories and may contribute to the extra calorie intake by the schoolgirls. In another study, Musiger et al., (2003) found that obese were more likely to watch television more than 4 hours a day than non-obese university male students in UAE (Table 3). In Egypt, Jaweesh (2002) found that 65% of children aged 9-12 years knew about chocolates and sweets through television advertisements (Figure 3).

**Figure 3: Source of information on new chocolates and sweets by Egyptian children (9-12 years) (N=200)**



**Table 3: Lifestyle Associated with Obesity among University Male Students in the United Arab**

Lifestyle Factor	Obese (n=107) BMI≥25 (%)	Non-Obese (n=193) BMI<25 (%)	Odds Ratio
<b><u>Watching TV/day</u></b>			
<4 hrs	75.7	82.9	1.00
≥4 hrs	24.3	17.1	1.31
<b><u>Sport practicing</u></b>			
Yes	8.4	17.1	1.00
No	91.6	82.9	1.77
<b><u>Having a car</u></b>			
Yes	58.9	51.3	1.00
No	41.6	48.7	1.22

Musaiger et al., 2003

### ***Pregnancy and Obesity***

Pregnancy and multiparity have been widely reported as factors participating in occurrence of obesity among women. The fertility rate of the women in this region is very high, and the spacing between pregnancies is short, with the result that more fat accumulation in women's body. Several studies indicate that obesity is high among women with multi-pregnancies and high parity. In Saudi Arabia, Al-Shammari et al (1994) reported that the mean BMI increased significantly with parity in Saudi women, as the mean BMI was 25.1 in women with no parity, increased to 27.1, 29.8 and 31.7 in women with 1-2, 3-4 and more than 4 parities, respectively.

### ***Other factors***

There are many other factors which may linked with obesity and received less investigation, such as home environment, body image, school environment, beliefs and attitudes, lack of health awareness and cultural conditions. The decline in exclusive breastfeeding and high depending on bottle feeding is another important factor. WHO (2003) reported that promotion breastfeeding may play in prevention of childhood obesity. Studies in the Region suggest a remarkable decline in exclusive breastfeeding and an increase in practising mixed feeding and bottle-feeding. Television advertising, long duration of watching television and playing in internet, high intake of fast foods, and increase in food intake outside home were also reported to be associated with obesity among children and adolescents in some countries in the Region (Musaiger, 2003c).

Smoking is another factor that maybe associated with inactivity. We found only one study in the region that correlated smoking with practising exercise. Hamadeh and Musaiger (2000) found that smokers were less likely to practise exercise than non-smokers. Of men smokers, 8% were practising exercise compared to 13% in ex-smokers and 16% in non-smokers. Recently Musiager (2006), reported that 81% of non-smoker men in Bahrain practiced physical activity compared to 67% of smokers.

Beliefs and attitudes toward obesity and physical activity should also be considered when studying factors associated with physical activity in the Arab communities. In Qatar, Musaiger et al (1991) found that there were several wrong attitudes toward obesity and reducing weight among women, and these attitudes were more prevalent in obese than non-obese women. For instance, 40% of obese and 35% of non-obese women believe that sauna baths help in reducing the fatness, and that therefore there is no need to practise exercise. In Bahrain, Al-Amer (1996) found that 53% of women avoid practising exercise because they believe that exercise causes extra muscle and negatively affects their figures.

### **Can we prevent and Control of Obesity**

Obesity has become one of the main health problems, and its associated with several chronic diseases in these countries. There is no strategy to pervent and control of obesity in health plans of most (if not all) countries of the Region. Additionally, there is a great lack in quantitative and qualitative research and studies on obesity. This creates the need for affective action, either to study



factors contributing to occurrence of obesity or to establish programmes to control it.

In order to discuss the problem of obesity and its management, as well as the role of physical activity in promoting health and controlling obesity, the Bahrain Center for Studies and Research in cooperation with the Arab Center for Nutrition have organized the first Arab Conference on Obesity and Physical Activity in Manama, Kingdom of Bahrain, during the period 24 – 26 September 2002. The main objectives of the conference were:

1. To understand the prevalence of overweight and obesity among various ages and sex in the Arab countries.
2. To find out social, economic, cultural, environmental and dietary factors associated with obesity in these countries.
3. To understand the physical activity and exercise patterns among children, adults and the elderly in these countries.
4. To find out factors and barriers to practising physical activity and exercise in the Arab countries.
5. To suggest recommendations to prevent and control obesity in the Arab communities.
6. To suggest recommendations for encouraging physical activity and exercise in the Arab countries.

The conference was attended by more than 300 participants from 14 Arab countries, namely Bahrain, Kuwait, United Arab Emirates, Saudi Arabia, Qatar,

Oman, Egypt, Sudan, Jordan, Lebanon, Tunisia, Morocco, Yemen and Palestine. The participants were nutritionists, dietitians, medical practitioners, exercise physiologists, physical education specialists, nurses, health educators, public health specialists, epidemiologists, and marketing specialists. The conference was concluded with a set of recommendations and suggestions to prevent and control obesity in the Arab countries. This report provides the translation of the recommendations of this conference (the main language of the conference was Arabic).

### Recommendations

In order to prevent and control obesity in Arab communities, it is necessary to induce changes in dietary habits, health behavior and lifestyle, taking into consideration five key issues:

1. Obesity is a serious health hazard and action is needed to prevent its becoming widespread.
2. Change in food habits is one important element to solve this problem through inclusion of more food with low energy such as fruit and vegetables.
3. Change in lifestyle is another element that needs to be considered, especially increasing physical activity among the Arab population.
4. There is a need for coordination and cooperation among all related sectors (governmental and private sectors) to establish successful programmes to solve this problem.

5. There is a need to establish a national strategy to prevent and control obesity in each Arab country.

#### Recommendations for Governmental Institutes

1. The governmental institutes in the Arab countries have a great responsibility to change or modify the environmental factors that are associated with obesity. This can be done through the establishment of regulations, programmes and activities that can help to reduce obesity and encourage physical activity in the community. Without convening the policy makers in the governmental institutes on the importance and seriousness of the problem of obesity, the chance of amending the situation is weak.
2. There is a need for regulations and legislation for the special institutes that work in the treatment of obesity, such as beauty centers, slimming clubs, hospitals, pharmacies, private clinics and shops provided slimming drugs, foods and exercise equipment. It was found that many of these institutes do not deal with treatment of obesity in a proper way.
3. There should be a health control on prescriptions, drugs and equipment sold for overcoming obesity.
4. There is a need for censorship of the claims provided through advertisements in the mass media on prescriptions, drugs and equipment that help to reduce obesity in individuals. This can be done through

establishing a committee to review the advertisement claims before releasing them.

5. The governmental institutes should seek all possible ways to provide places and facilities for practising physical activity and exercise, taking into consideration the traditions and culture of the society in each country.
6. Training courses should be provided to improve the knowledge and skills of people engaged in the prevention and treatment of obesity. Such courses should include adequate and up-to-date information on the dietary management, assessment and exercise needed to treat obesity.
7. Sound and reliable information on dietary management and physical activity to prevent and control obesity should be introduced in school and university curricula. It is preferable that a committee consists of specialized people from universities, the health sector and other related sectors to review the information provided to the students through these curricula.
8. Physical activity in schools should be encouraged through physical education classes and training of physical education teachers.

#### Recommendations for People Engaged in the Prevention and Treatment of Obesity

Such people include general practitioners, nutritionists, dietitians, exercise specialists, nurses, physical education teachers and other health care providers.

Those people should consider the following issues:

1. It is necessary to take at least the weight and height of patients or individuals who seek health treatment or who are involved in exercise, to assess their weight status.
2. It is important to provide the patients or obese subjects sound health and nutrition information on obesity. Such information should be obtained from reliable sources.
3. To provide sufficient treatment of obesity, healthcare providers should have adequate understanding of the physiological, social and psychological bases of obesity.
4. Patients or obese subjects should be provided adequate information on physical activity or exercise, taking into consideration their health condition, traditions and culture.

#### Recommendations for Communication Bodies and Communicators

Indicators point to a lack of health and nutrition awareness related to obesity and its management in Arab communities. In addition, the mass media have participated in the wide spread of fads and wrong beliefs concerning treatment of obesity. Therefore it is recommended that:

1. The mass media organizations should provide sound and reliable information on the treatment of obesity.
2. It is important to prepare programmes to educate the public on causes, prevention and management of obesity. These programmes should include the following components:

- a. Healthy diet for various age groups and sex.
- b. Physical activity according to age, sex and health status of the individuals.
- c. Advice for better selection of exercise equipment.
- d. Advantages and disadvantages of various methods of treating obesity.
- e. Correction of unsound beliefs and attitudes related to obesity and physical activity.

#### Recommendations for Private Sector and Non-governmental Organizations

There are several private and non-governmental organizations that deal with obesity either directly or indirectly, such as medical, nutrition and women's societies, food and drug companies, sports companies and international organizations.

These organizations could participate in the prevention and management of obesity through the following activities:

1. Carrying out training courses in management of obesity for healthcare providers.
2. Organizing conferences, symposiums and workshops on obesity and physical activity.
3. Conducting educational programmes through various mass media.
4. Providing funds for the above activities.

5. Providing healthy and low energy density foods (food companies), or reliable drugs (drug companies) or suitable and reliable exercise equipment (sports companies).

#### Establishing the Arab Taskforce for Obesity and Physical Activity

There are many regional taskforces for obesity in developed and developing countries. However, there is no regional taskforce for obesity in the Arab region. Therefore, the participants of this conference felt that it is necessary to establish an Arab Taskforce for Obesity and Physical Activity. The secretary of this taskforce will be in the Bahrain Center for Studies and Research, the Kingdom of Bahrain. The main objectives of this taskforce are as follows:

1. Increasing the awareness of the public in Arab countries on the causes, prevention and treatment of obesity.
2. Encouraging physical activity in various age groups of the Arab population.
3. Working as an official body to review and provide sound and reliable information on obesity and physical activity in Arab countries.
4. Providing technical assistance related to the management of obesity for governmental and non-governmental institutions in the Arab region.
5. Releasing documents, position statements and publications related to obesity and physical activity.
6. Working to standardize the methods of assessment of obesity and physical activity in the Arab region.

7. Carrying out research and studies on obesity and physical activity, as well as training courses in the management of obesity.



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