

Physical activity patterns and eating habits of adolescents living in major Arab cities. *The Arab Teens Lifestyle Study*

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During recent decades, almost all major cities in the Arab countries have witnessed dramatic lifestyle changes. This is mainly due to rapid urbanization, crowded population, availability of high-fats and dense-caloric foods, propagated satellite TV, increased reliance on computer and telecommunication technology, and decreased occupational-work demands. These enormous lifestyle changes have considerable negative impacts on societal health. In fact, such lifestyle transformation was thought to be greatly responsible for the epidemic of non-communicable diseases along with their complications in this part of the world.^{1,2} According to the World Health Organization, the most important risk factors of non-communicable diseases in the Arab countries included high blood pressure, high concentrations of cholesterol in the blood, inadequate intake of fruit and vegetables, overweight or obesity, physical inactivity and tobacco use. Five of these risks are closely related to improper diet and physical inactivity.³

Physical inactivity and unhealthy diets are considered among the leading causes of major non-communicable diseases, including cardiovascular disease, type 2 diabetes and certain types of cancer, thus contributing substantially to the global burden of disease, death and disability in the Arab countries.⁴ On the other hand, regular physical activity and proper dietary habits can maintain and improve the individuals' physical and mental health and well-being.³ Furthermore, participation in health-enhancing physical activity is a key determinant of energy expenditure in youth and leads to improved cardiovascular and metabolic fitness as well as bone health.⁵ In addition, recent research findings have shown that TV viewing (sedentary activity) and physical activity appear to be separate entities and are independently associated with metabolic risk.⁶ The formative years of adolescence is a crucial stage in human lifestyle as it is the stage where lifestyle habits are formed and set. It seems, thus, that monitoring of physical activity patterns, and eating habits of Arab adolescents using standardized data-collection procedures, and studying the interactions between them are very essential tools in the implementation of national strategies for the promotion of healthy lifestyle in the Arab countries, and for providing the impetus for subsequent interventional

studies. Studies on lifestyle and its association with adiposity among adolescents in the Arab region are, at most, scanty. Therefore, the need for studying the lifestyle of the Arab adolescents living in major cities of the Arab world, using one standardized procedures and valid instrument,⁷ can not be overemphasized. The Arab Teens Lifestyle Study (ATLS) project was recently initiated to assess the physical activity patterns, sedentary activity and eating habits of randomly selected samples of secondary-school boys and girls (15-18 years) living in major Arab cities. Thus, the aim of this paper was to present a brief description of the objectives, procedures, and the general implications of the ATLS, as a unique Arab's collaborative research project.

In the beginning of fall 2009, data collection started in 9 major Arab cities, including Riyadh, Jeddah, and Al-Khobar (Saudi Arabia), Dubai (United Arab Emirates), Bahrain, Kuwait, Al-Mosul (Iraq), Amman (Jordan) and Cairo (Egypt). More Arab cities will be included in this project and are anticipated to begin data collection during the spring and fall of 2010. Beside measuring body weight and height, as well as calculating body mass index (BMI) of the target samples, direct measurements of waist circumference were obtained. Waist circumference is considered a simple measure of fat distribution in children and adolescents, and is least affected by gender, race, and overall adiposity. The research instruments used for collecting lifestyle variables consist of a previously validated questionnaire containing 47 items, related to patterns of physical activity, sedentary activity (television viewing time and computer use) and eating habits.⁷ All forms of physical activity domain are included in the questionnaire (household, leisure, transport, as well as fitness and sports activities). The questionnaire allows us to calculate the total energy expenditure in kilocalories per week, based on metabolic equivalent (MET) values of all types of physical activities reported by the participants.

Since the primary objective of the study was to provide reliable population estimates of physical activity patterns and eating habits, the sample design called for a wide geographical coverage of the chosen cities, with careful representation of the population in both public and private secondary schools. The needed sample size in each city was determined so that the sample proportion would be within ± 0.05 of the population proportion with a 95% confidence level. For example, in the city of Riyadh, the population of the male students in the public and private secondary schools are approximately 75,000. The needed total sample size for male students is 382. An additional 15% is also added to the determined sample size. Table 1 shows the sample sizes for male and females in the Arab cities participating in an ATLS

Table 1 - The participating Arab cities, and the sample size in Arab Teens Lifestyle Study (ATLS) project.*

Participating city	Sample size		
	Male	Female	Total
Al-Khobar, KSA	347	361	708
Al-Mosul, Iraq	360	360	720
Amman, Jordan	385	349	734
Bahrain	430	430	860
Cairo, Egypt	460	460	920
Dubai, UAE	421	525	946
Jeddah, KSA	520	526	1046
Kuwait	650	650	1300
Riyadh, KSA	520	516	1036
Grand total	4093	4177	8270

*Up to the fall of 2009. More cities are expected to join ATLS in the spring and fall of 2010. KSA - Kingdom of Saudi Arabia, UAE - United Arab Emirates

project. This project will definitely provide us with unique opportunities to collect and analyze such important lifestyle information from Arab adolescents using a standardized data collection procedures. Obtaining waist circumference beside BMI measurement, a unique feature of ATLS project, will enable us to draw conclusion on the relationships of lifestyle patterns to not just overall adiposity, but also to central obesity. It is expected that the findings stemming from this regional and collaborative research endeavor will be substantial and very beneficial from public health perspectives. The results of this joint research will certainly supply us for the first time with a comprehensive and recent data on physical activity/inactivity patterns and eating habits of Arab adolescents, and their relationships to adiposity measures. Finally, this project will provide invaluable baseline data for public health authorities and policy makers in the Arab countries, which are very essential for any strategy aimed on preventing and controlling non-communicable diseases.

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