

NUTRITIONAL SITUATION OF WOMEN AND DETERMINANTS OF OBESITY IN TURKEY

From nutrition point of view Turkey seems to have both developing and developed countries problems. Nutrition in Turkey considerably varies by regions, seasons, socio-economical background and urban-rural residences. One of the main causes of this variation is income distribution. Inadequate knowledge and lack of awareness on nutrition lead to wrong food preferences, improper food preparation, cooking and storage practices, thus increase nutrient losses. Besides, years – long inflation and other economical causes, advertisements, growing fast food habit are also the likely causes of nutritional problems and especially obesity.

Between 1965 and 1995 the population of Turkey has doubled and it is projected as more than 90 millions by 2030. According to FAOSTAT data, between 1965 and 1997, average daily per capita Dietary Energy Supplies (DES) increased from 2962 kkal to 3500 kkal. In the same period, average daily per capita energy requirements slightly increased from 2200 kcal to 2258 kcal. In general, chronic energy deficiency is not a main problem for the adult population in Turkey.

Turkey with respect to its climate and land nature is suitable for the production of various products. Wheat is a staple food for the Turkish people. The major percentage of energy comes from bread (44%) and bread with other cereals (58%). Wheat is mainly consumed as bread, macaroni and bulgur (parboiled pounded wheat). Maize is widely used in the Black Sea region. Although rice is widely consumed in Turkey, the production does not meet domestic demand, and the supply deficiency is covered by importation. Lentils, chickpeas and dry beans are the most widely consumed pulses. Meat, as lamb and beef is the main ingredient of the Turkish cuisine, but recently it has been changed, because of the high prices of meat. Yogurt is the most frequently used milk product. Fresh vegetables and fruits are abundantly available throughout the year, and widely consumed. Butter, margarine and vegetable oil consumption varies from one region to another but olive oil consumption is common in the Thrace, Aegean and Mediterranean regions. Margarine has been replacing butter since the last 15 years.

Therefore, it is possible to evaluate nutritional trends in Turkey within the frame of food supply and demand. The per capita consumption of milk-yogurt, meat, fresh fruits and vegetables has decreased in the last years and of legumes, eggs and sugar has increased. Although total oil consumption has not changed much, vegetable oil consumption is now has recently exceeded margarine consumption.

The most significant issue on food accessibility is the income distribution. Poverty studies conducted on minimum food expenses show that 8.4 percent of the individuals live below poverty threshold. The nutrition and dietetic studies examined this vulnerable group in the last years revealed that consumption expenses on cereals, sugar and tea-coffee has increased, while expenses on meat, fish, fruit juice and confectionery decreased. The expenses of these households on milk, cheese and eggs do not show much variation.

Turkey has a long tradition of conducting nationwide demographic surveys since 1968. So far, 8 nationwide sample surveys conducted at regular five year intervals by the Hacettepe University, Institute of Population Studies. The last national level survey conducted in 2003 gives the possibility to perform analyses for Turkey as a whole, for urban and rural areas and for five demographic regions of the country.

In the last three national level demographic and health surveys, data were compiled in the form defined by the DHS heritage; they are Turkey Demographic and Health Survey (TDHS) 1993, 1998 and 2003. The primary objective of these studies mainly was providing data on fertility and mortality, family planning, maternal and child health, and reproductive health at the national level. One another objective was to measure the nutritional status of children under five and ever married

women using anthropometric measures. All of these studies included separate sections at the end of ever married women questionnaire that is called as 'height and weight' section. In order to assess women's nutritional status, the ever married women, were weighted by a standard electronic scale¹ and their heights were measured by a wooden measuring board. The same equipment also used to obtain children's measurements as well.

In order to obtain height and weight information, standard procedures were used in the three TDHS. Each survey team staff was composed of 1 supervisor, 1 field editor, 4-5 interviewers and 1 measurer. During the training process for the fieldwork, all of the trainees, whatever the real position in his/her team, were trained about measurement process. The field staff had opportunity to practice measuring process both in classroom exercises, kinder garden environment and in pre – test study before the actual field studies. The measurer was the primary responsible personnel for conducting measurement process and the interviewers were responsible for assisting in this stage if necessary.

This study has two aims; the first one is to investigate the change in the nutrition situation of Turkish women in general between 1993 and 2003. The second one is to examine determinants of obesity among different groups of women in Turkey by employing a number of statistical descriptive and multivariate methods.

The height and weight information obtained in the three surveys were used to calculate the body mass indexes (BMI) for the survey date. BMI assess the relation between height and weight and is calculated by dividing the weight in kilograms by the squared height in meters. BMI value higher than 25.0 is often used to identify women with problems with overweight and obesity, for the definition accepted by WHO. Obesity is simply defined as chronic imbalance between energy intake and energy expenditure. In this respect, the women who have at least 30.0 BMI were classified as 'obese' women.

The first examination of BMI values, obtained in the three surveys, reveals that the proportion of women who's BMI were 25 and over increased from 50.7 percent in 1993 to 57.0 percent in 2003. Likewise, the proportion of women having obesity problem increased from 18.7 percent to 22.7 percent. The change in BMI figures implies that substantial part of the increase from 1993 to 2003 actually occurred in the last five years. The increase in the proportion of obese women between 1993 - 2003 period was 21.4 percent and this presents the fact that increase in the obesity has the greatest share in raising general over weight problem. Previous studies on prevalence and predictors of obesity underlies a number of factors; age, childhood place of residence, level of education, marital status, household welfare, working status, number of pregnancies and live births, type of delivery, breastfeeding and opportunity to decide how to spend her own money.

The most present and nationwide picture on overweight and particularly obesity is examined from the data of TDHS – 2003. The survey based on a nationally representative probability sample of 10,836 households and 8,075 ever married women under 50 years of age. The height and weight information gained from all ever married. Overall, BMI increases with age. Especially beyond age 30, BMI exceeds 25.0. Obesity increase from 30 percent among women aged 30 – 34 to 40 percent among women aged 40 – 44. BMI is also appears to be related with the educational levels. Mean BMI value among the women with no education is 27, while women with high school education or more had an average BMI of 24. It is interesting to note that there is no differentiation observed regarding the type of place of residence in BMI. According to regions, the obesity is seen more common among women living in the Central and North regions.

The study will employ a number of statistical methods for examining key questions related to obesity. The basic question "who are obese women?" is answered by a descriptive analysis and differentials in terms of the individual, cultural, fertility and contextual variables will be presented. The individual variables include characteristics of the women that have been shown to have impact on behavioral measures; including 'age', 'educational level', 'other education'², 'economic activity'

¹ These scales were manufactured for UNICEF.

² Like having any vocational training, language education etc. out of formal school education

and 'work status'. The cultural variables represent factors that capture differences among respondents in the socially transmitted complex of knowledge, belief, morals and custom. Some daily life activities related to physical fitness are concerned here. The cultural variables, in this sense, are 'ethnicity', 'traditionality score'³, 'making a branch of sport regularly' and 'smoking habit'. The fertility variables will include 'marriage cohort', 'number of living children'. Lastly, the contextual variables include 'region', 'current type of residence' and 'household welfare'⁴ and 'family type'⁵. Regarding to multivariate analysis, mainly logistic regression models, will be used to explore the second question "what are the determinants of obesity?"⁶. The analysis will examine the odds of having BMI values ≥ 30 . For the confounding effect of pregnancy, pregnant women and women given births in 3 months prior to the survey date discarded from analysis. The model fitting process will be stepwise and involve four subsequent stages; individual, cultural, fertility and contextual variables, in order to assess the additive effects of the micro and macro level variables simultaneously.

The study will enable us to see the prevalence of obesity throughout Turkey in today; as well as the trend in the last ten years and the main socio – economic, demographic and cultural determinants.

REFERENCES

FAO (2001). "FAO Nutrition Country Profiles-Turkey", March, 2001.

Girma W and Genebo T (2002), "Determinants of Nutritional Status of Women and Children in Ethiopia", ORC Macro, Calverton, Maryland, USA

Hacettepe University Institute of Population Studies, Ministry of Health and Macro International Inc. (1994) **Turkish Demographic and Health Survey 1993**. Ankara, Turkey

Hacettepe University Institute of Population Studies, Ministry of Health and Macro International Inc. (1999) **Turkish Demographic and Health Survey 1998**. Ankara, Turkey

WHO/FAO (2003). "Diet, Nutrition and the Prevention of Chronic Diseases", WHO Technical Report Series, 916, Geneva.

Yiğit E., Tezcan S., Çakır B. (2003), "Obesity Prevalence and Its Predictors in Reproductive Age Women in Turkey in 1998" presented paper at IV. International Nutritional and Dietetics Congress, 2 – 5 April 2003, Antalya

³ The traditionality scale will be composed a set of social practices relating to mainly marriage that are seen as conservative and traditional as opposed to modern and contemporary.

⁴ Data on income from the household questionnaire will be used to look at household welfare.

⁵ Family type will grouped into two categories as 'Nuclear' and 'Extended' families

⁶ A dummy dependent variable is coded as '0= Not Obese (BMI <30) ' and '1=Obese (BMI \geq 30)'