PHYSYCAL ACTIVITY LEVEL OF TURKISH SOCIETY RESEARCH

Active Living Association, 2010

Aktif Yaşam DERNEĞİ

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HIGHLIGHTS

* Only **25%** of the society have sufficient physical activity level. In another saying, **three** out of every four people doesn't have a sufficient physical activity level.
* Most inactive group is **15 – 19** age group. **63%** of the youth in this age group is inactive.
* **55+** age group follows 15 – 19 age group with the **54%** sedentary rate as the second most inactive age group. The most physically active age group is **35 – 44**.
* Low income group is the most inactive group with **44%** sedentary rate. This rate descends to **33%** in high income group.
* According to analyze of occupational situations; **students** are most inactive group with **72%** sedentary rate.
* Physical activity level increases in business life. The great majority of active people is blue collars. Blue collars are the most active group.
* Leisure time is the most inactive time in society's daily life. Leisure time behaviors are not containing physical activity.

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PHYSICAL ACTIVITY LEVEL OF TURKISH SOCIETY RESEARCH

BACKGROUND AND PURPOSE

Besides there are researches which involves different age groups, genders, business lines and commonly analyzes the factual situation, there isn't a physical activity research represents Turkish society. The information about Turkish society's physical activity level, habits and expectations are not extensive enough, thus it constitutes an impediment for determining healthy strategies and practicing in this field.

Considering this fact, the purpose of Physical Activity Level of Turkish Society Research, is to reveal society's physical activity levels, habits, perceptions and expectations and, based on these obtained data, to develop active living strategies for different target groups.

CONTENT

In physical activity researches, apart from measurement by monitoring, there are three basic measurement tools which are commonly used and conducted based on individuals' statements. One of these tools is **MET**[1] (Metabolic Unit) figure which provides direct physical activity level calculation. MET values which are internationally determined and updated by scientists[2], are used for determining individual's physical activity levels[3].

Another tool for physical activity measurement is **BMI** (Body Mass Index). Though it's not directly related to physical activity levels, it's commonly in use for calculations of physical activity levels[4]. Categorizations done by using MET values are also can be analyzed with BMI values.

[1] 1 MET is equal to oxygen cost of sitting quitly, equivalent to 3.5 ml/kg/min. This value is equivalent to body's energy expenditure while reading, talking on phone or sitting quitly.
[2] According to categorization well accepted intenationally; activities under 3 MET are considered as **light intensity**, activities between 3 – 6 MET are considered as **moderate intensity** and activities more than 6 MET are considered as **vigorous intensity** activities.
[3] According to International Physical Activity Questionnaire categorization; physical activity levels of individuals are categorized as, **low physical activity level** (<600 MET-min/week), **moderate physical activity level** (600-3000 MET-min/week) and **high physical activity level** (>3000 MET-min/week).
[4] Dünya Sağlık Örgütü'nün geliştirdiği sınıflandırmaya göre: vücut kitle indeksi erkek ve kadınlar için, BMI (kg/m2) <18,5 **Zayıf** , 18,5–24,9 **Normal**, 25-29,9 **Kilolu** ve >30 **Obez** olarak belirlenmiştir

Another commonly used tool is **PAL**[5] (Physical Activity Level). PAL categorizes and digitizes daily physical activity amounts of individuals. PAL is formulated as a person's total energy expenditure divided by his or her basal metabolic rate (the amount of energy expended for body functions), and PAL can be analyzed with MET and BMI values.

"International Physical Activity Questionnaire" is a question form prepared to let calculations done by using MET and Body Mass Index values and categorizations and used commonly worldwide. This questionnaire is designed for 15-69 age group and based on physical activities done in last 7 days. Great numbers of researches are based on this questionnaire; but it includes subjective conclusions, perceptions, expectations, and it extends properly for subject country and target groups characteristics.

Besides these practices, there are researches which measures only factual situations (country-wide or within a specific group) or researches designed to reveal perceptions and expectations only.

Active Living Research, involves these two aspects together. First aspect is physical activity levels and body mass indexes calculated by using MET (Metabolic Unit) of Turkish society and various subgroups which are formed according to region, age, gender, occupational and educational situations, and second aspect is habits, perceptions and expectations about physical activity of Turkish society.

Questions and analysis for first aspect is designed to provide calculations of MET and Body Mass Index and based on International Physical Activity Questionnaire. Questions and categorizations of second aspects is designed according to elaborated habit manners, perceptions and expectations.

METHOD

Within the scope of research, 4900 interviews had been made by using 2 separate methods and two separate question forms. 12 provinces from NUTS1[6] areas (İstanbul, Ankara, İzmir, Bursa, Balıkesir, Antalya, Malatya, Kayseri, Samsun, Trabzon, Erzurum, Diyarbakır) had been selected to represent Turkey to generate samples[7]. Populations of 12 provinces had been dealed accordingly to samples and stratification had been made as gender and age according to population data of 2007 received from Turkish Statistical Institute. Stratifications had been determined in accordance with Turkish Statistical Institute data as 15-24 male age group, 15-25 female age group, 25-39 male age group, 25-39 female age group, 40-54 male age group, 40-54 female age group, 55+ male age group, 55+ female age group and sample dispersions had been calculated for every province.

[5] PAL=Toplam harcanan enerji/bmr PAL kategorileri: Sedanter (1.0 ≤ PAL < 1.4), Fiziksel aktivite düzeyi düşük (1.4 ≤PAL < 1.6), Aktif-Fiziksel aktivite düzeyi yüksek (1.6 ≤ PAL < 2.5)

[6] Turkish Statistical Institute categorized Turkey's geography in three with The Nomanclature of Terrotorial units for Statistics (NUTS) within the scope of EU membership accordance procedures. This triple categorization is based on these criterias; population, regional development plans, socio-economic developments of provinces, basic statistical indicators. NUTS 1 is a 12-territory category and is used as a representation force for statistics.

[7] 4900 people who formed the sample, represents Turkish society with 95% confidence inteval and +-1,4% error margin.

In the research, two question forms had been used; one is short question form and the other is long question form which the extended version of was the short one. Short form had been applied to all sample (4900 people), long form had been applied to 1537 people. CATI[8] (Computer Assisted Telephone Interviewing) and face-to-face interview methods had been used in the research. Short form had been used in both methods, long form had been used only in face-to-face interviews. According to above mentioned sample calculation, 1537 of 4900 interviews had been done as face-to-face, 3363 of 4900 interviews had been done by using CATI method.

ANALYSIS FRAMEWORK

According to results of CATI and face-to-face methods practices,

- According to World Health Organization's categorization, the dispersion of Turkish society's body mass index had been categorized as **Underweight** (BMI (kg/m2) <18,5), **Normal (**18,5–24,9), **Overweight** (25-29,9) and **Obese** (>30).
- With the consideration of MET calculations, physical activity levels had been categorized as; **low physical activity level** (600 MET-min/week), **moderate physical activity level** (600-3000 MET-min/week) and **high physical activity level** (>3000 MET-min/week).
- With the consideration of PAL calculation, physical activity levels had been categorized as; Sedentary (1.0 ≤ PAL < 1.4), Low physical activity (1.4 ≤PAL < 1.6), Active-High physical activity (1.6 ≤ PAL < 2.5).
- Physically participation forms; reasons for doing and not doing physical activity, caring and not caring about physical activity had been revealed.
- Perceptions, expectations and needs about physical activity of different categories had been determined.

[8] CATI, is ac omputer based interview method which is done by telephone. In this interview method, samples are randomly picking from pools which are determined according to quotas and forms are filling in accordance with telephone interviews. Gathered datas are recorded by the computer during the interviews.

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RESULT GRAPHICS

1. PHYSICAL ACTIVITY LEVELS

What is Physical Activity Level (PAL)?

Physical Activity Level (PAL) is a way to express a person's daily physical activity as a number and total energy expenditure. According to International Physical Activity Questionnaire (IPAQ) calculations, PAL value impact areas are determined as; transportation, work, leisure time, domestic and garden works.

PAL Categories:

- *Sufficient Physical Activity Level:* Sufficiently active, from a health perspective
- *Low Physical Activity Level:* activity level is not dangerously low from a health perspective, but not sufficient
- *Sedentary Physical Activity Level:* activity level is dangerously low, from a health perspective

What is MET?

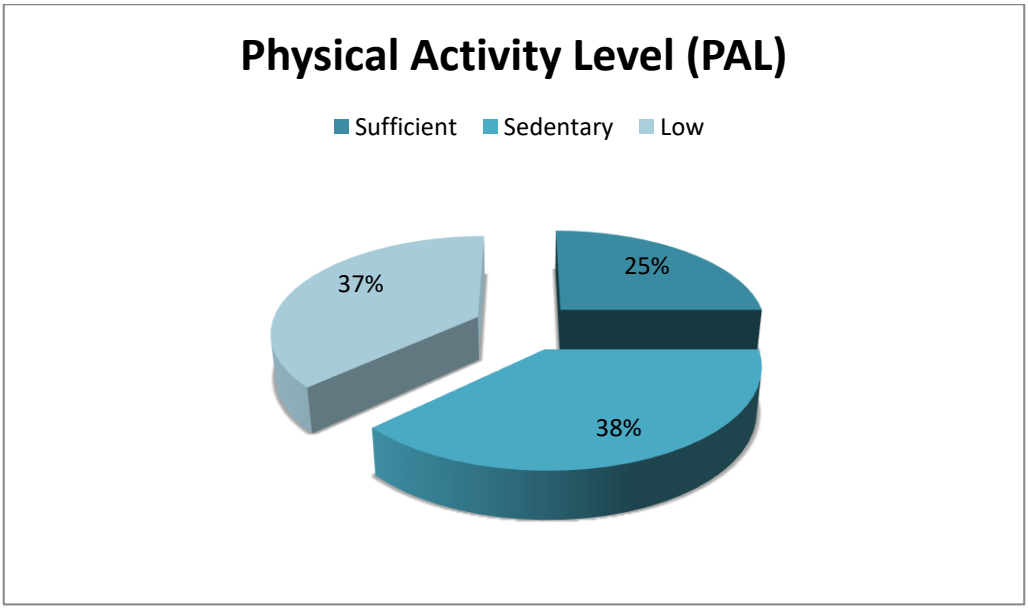
MET (Metabolic Equivalent of Task) expresses the energy cost of a given physical activity. It gives us the rate of energy consumption during a specific physical activity.

1 MET = metabolic rate consuming 1 kcal/kg/hour.
1 MET is equivalent to metabolic rate while resting.

MET Categories

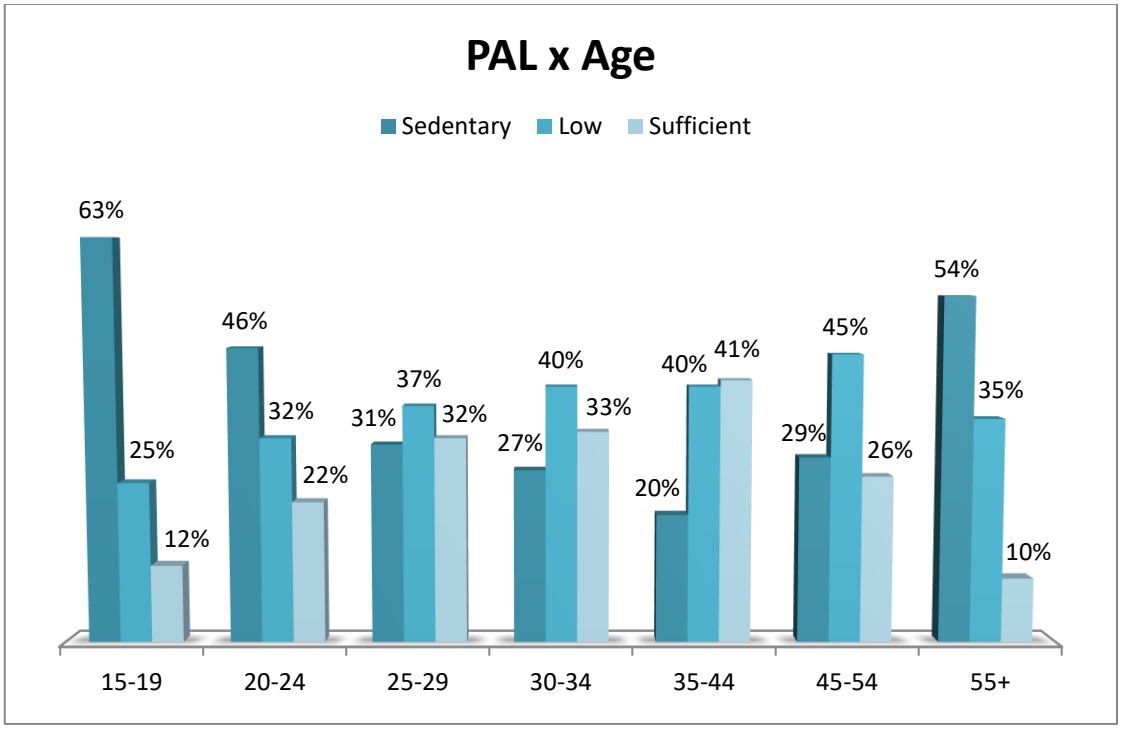
According to internationally accepted categorization; activities under 3 MET are considering as **light intensity**, activities between 3-6 MET are considering as **moderate intensity** and activities more than 6 MET are considering as **vigorous intensity** physical activity.

PAL Distribution of Turkish Society



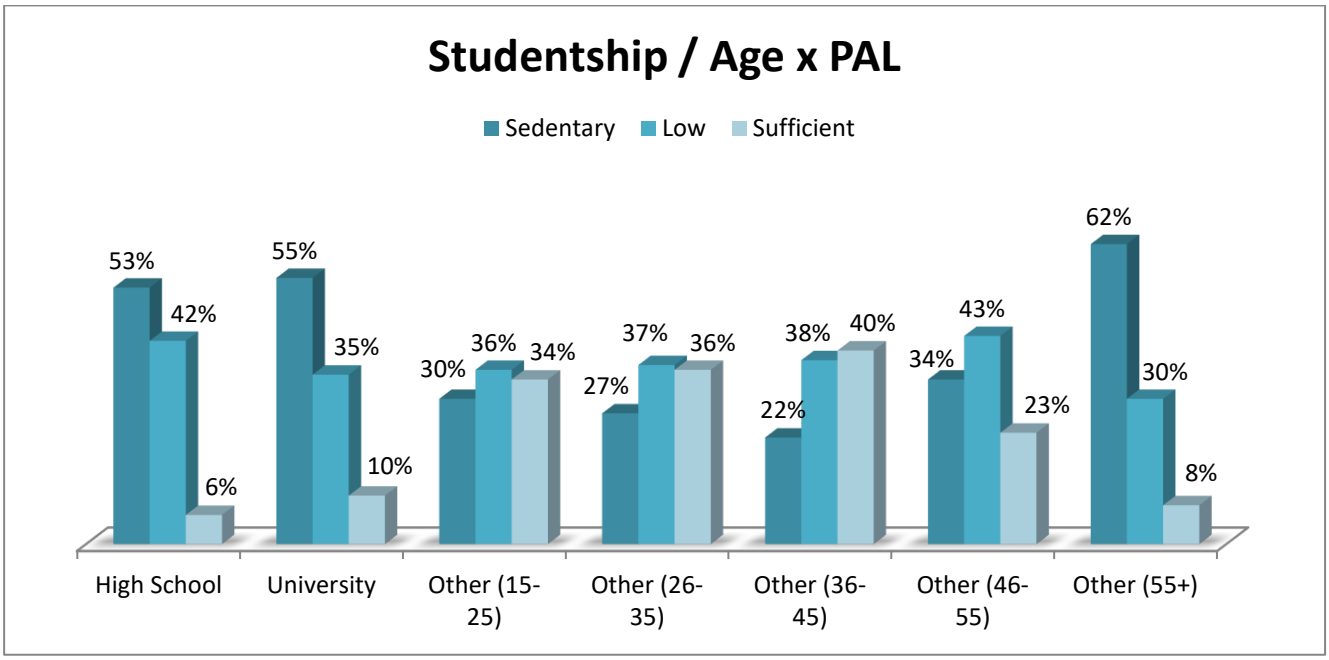
* 3/4 of the population is not sufficiently active

PAL Distribution with Age Groups



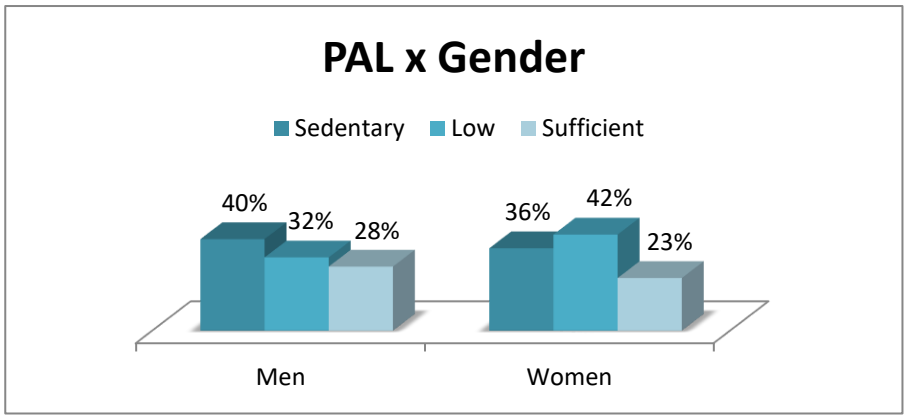
* When looking at the PAL distribution with age groups, it seems youngsters and elderly people are not active enough.
* 15 – 19 age group is followed by 55+ with the sedentary rate of 54%. 35 – 44 and 30 – 34 age groups are the most active age groups. This can be said that the reason of this is working life.

PAL Distribution with Studentship and Age Groups



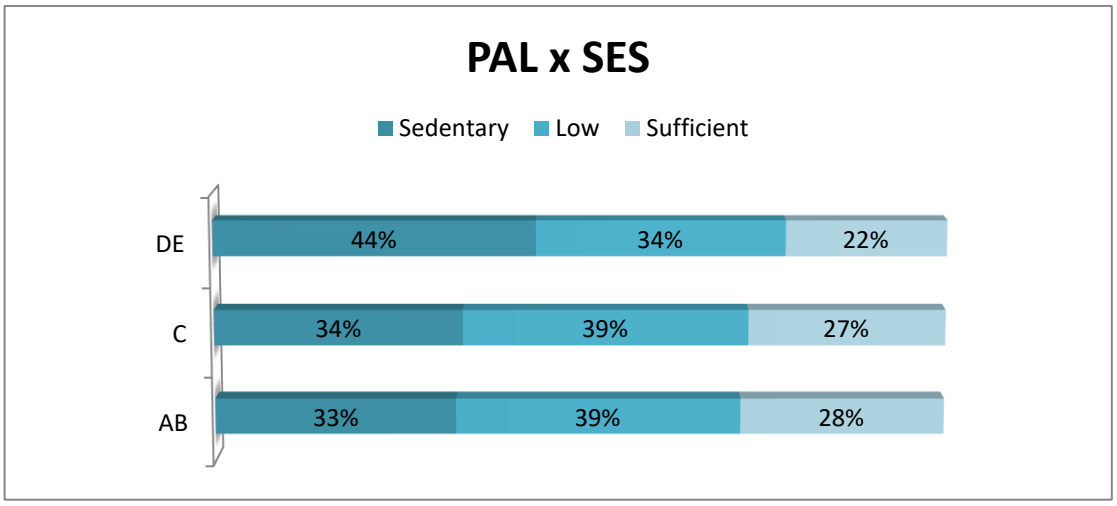
* High school and university students' PAL attitudes are like elderly people.
* High school students have lowest sufficient PAL ratio. Non-students in the same age group have higher PAL ratio. It can be said that the reason of this difference is active working life.

PAL Distribution with Gender



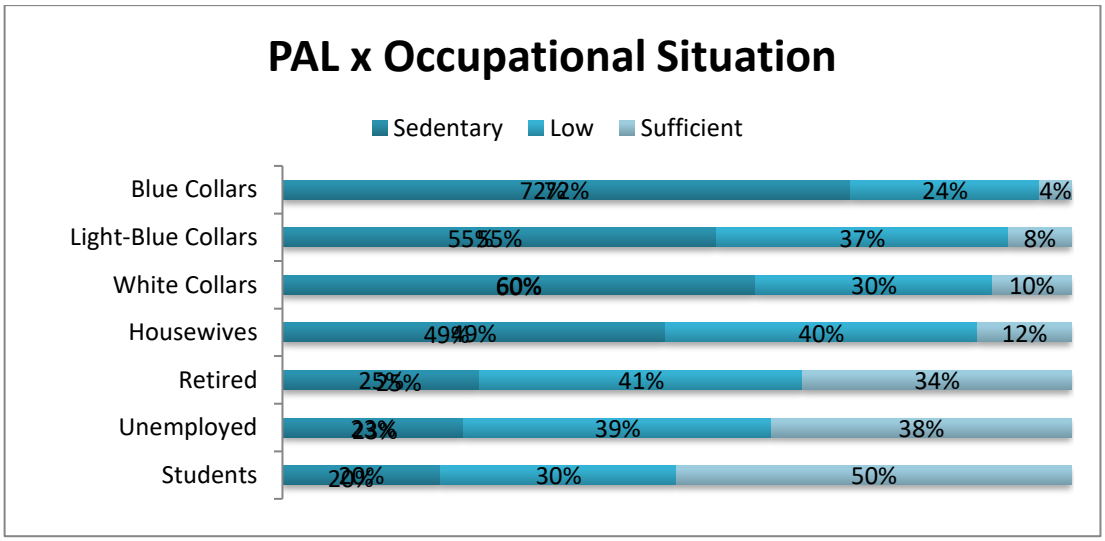
* Men's sedentary PAL ratio is higher than women's
* Men's sufficient PAL ratio is higher than women's. The reason of men's sedentary and sufficient PAL ratio is higher than women's is the difference between employed and non-employed men's is higher than women. We can say that the reason of men's sedentary and sufficient PAL percentages are higher than women's, is that men are more involved in business life than women.

PAL Distribution with Socio-Economic Status



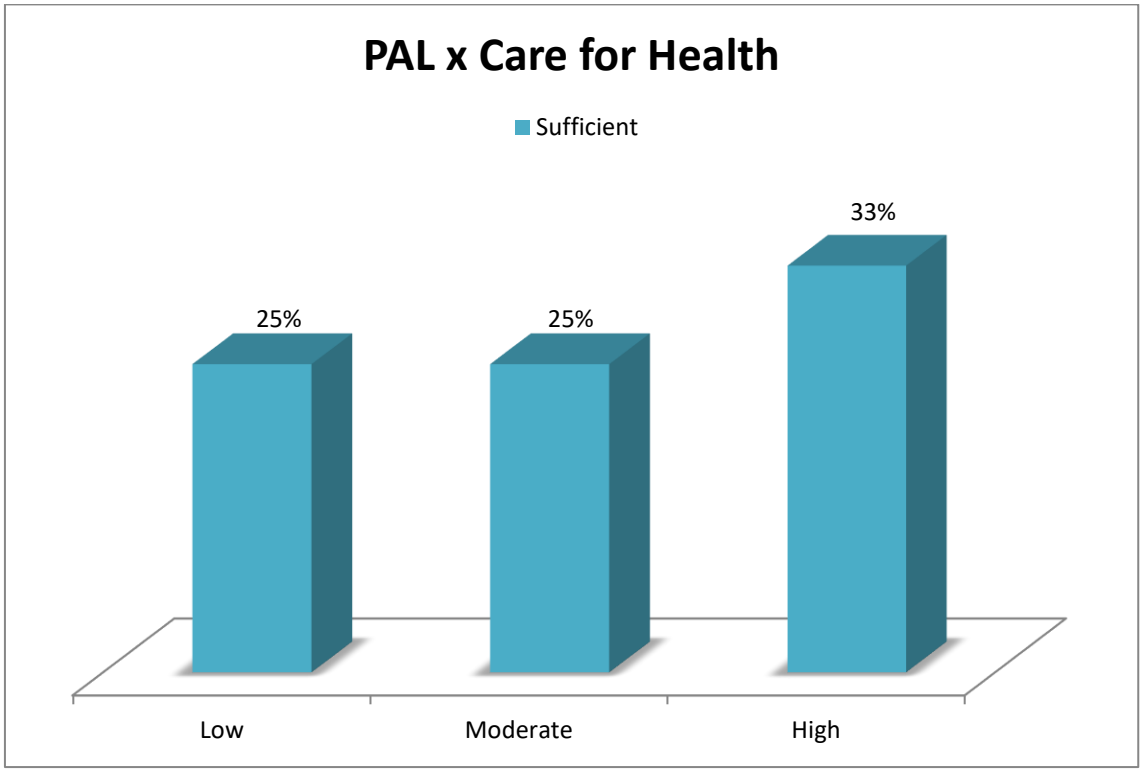
* DE SES group have the lowest physical activity level.

PAL Distribution with Occupational Situation



- "Blue Collars[9]" have the highest PAL ratio between working people
- "Housewives" have the highest PAL ratio between employed who works irregularly.

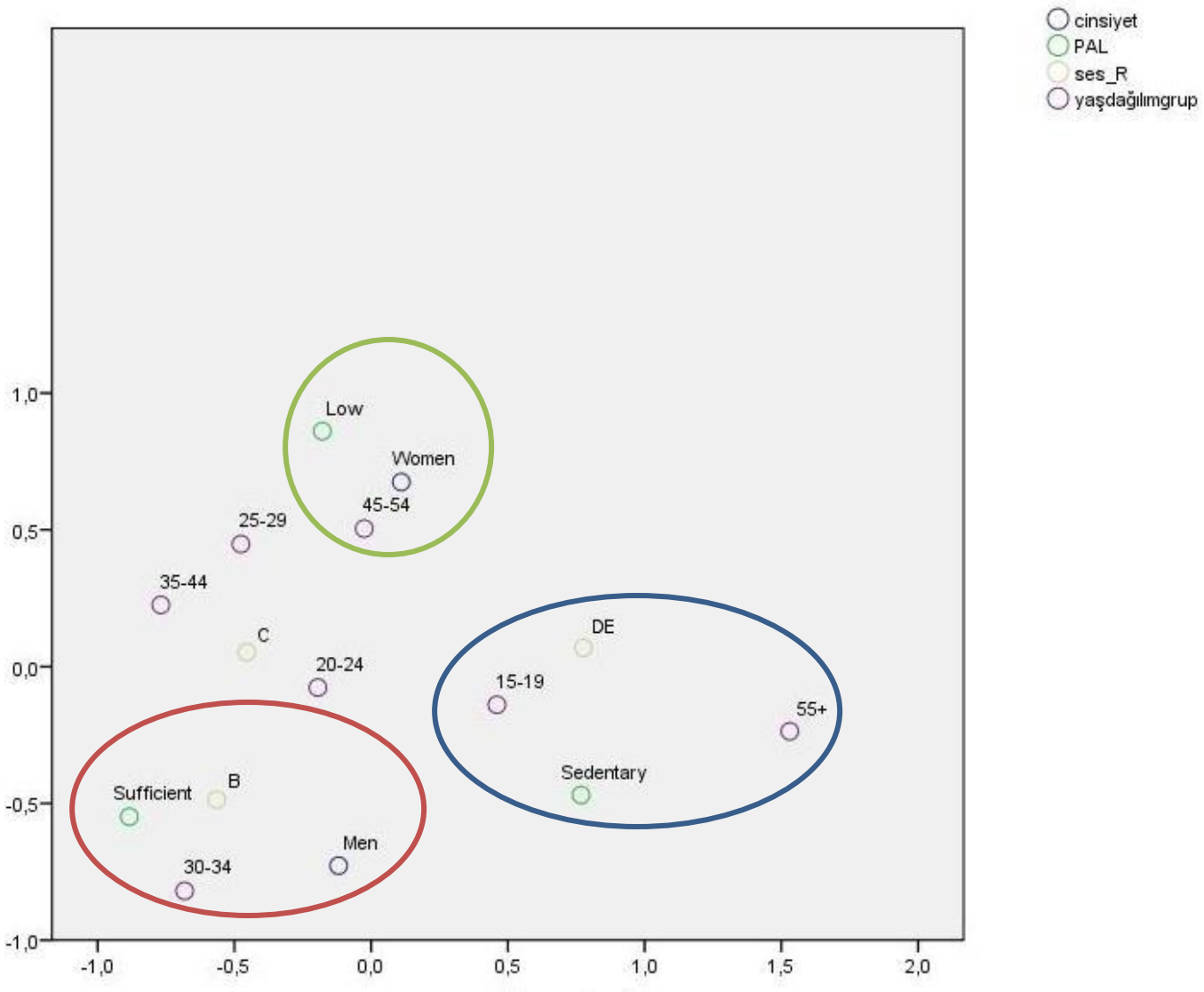
PAL Distribution with Care for Health



- When looking at PAL distribution with care for health, people who have high health situation, also have the highest PAL ratio.

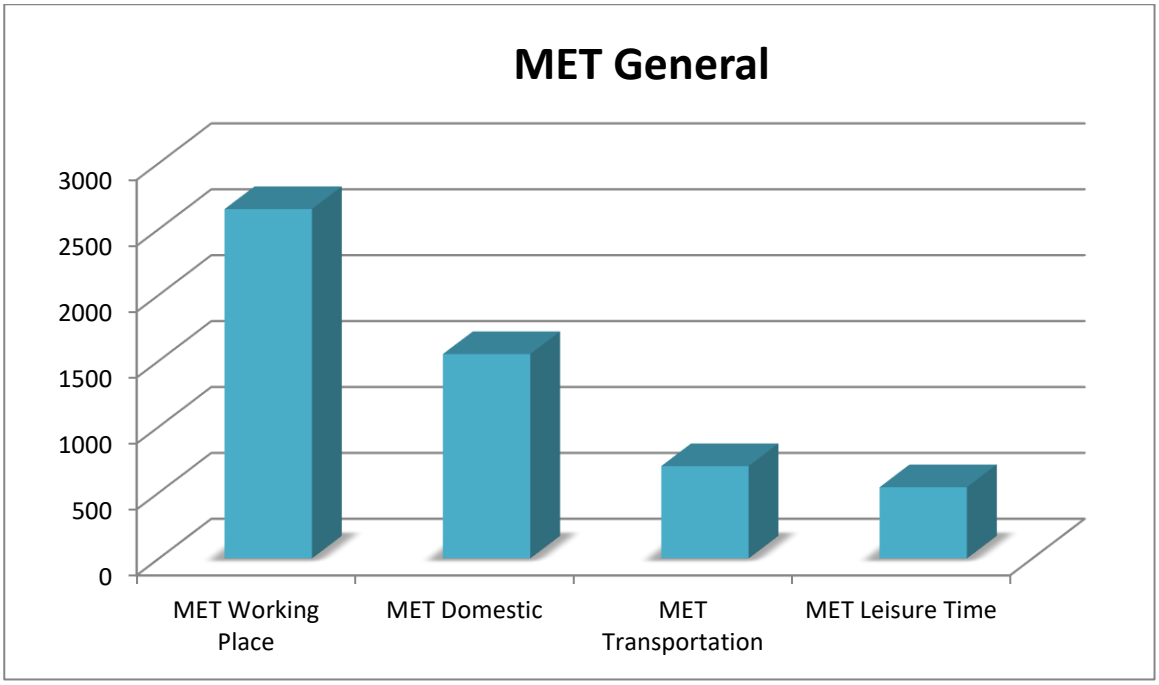
[9] **White Collars:** Executives, staff working without mobility
Light-Blue Collars: Medical doctors, shop keepers, lawyers
Blue Collars: Workers, drivers, miners

PAL Distribution with Socio-Economic Status, Gender and Age Groups



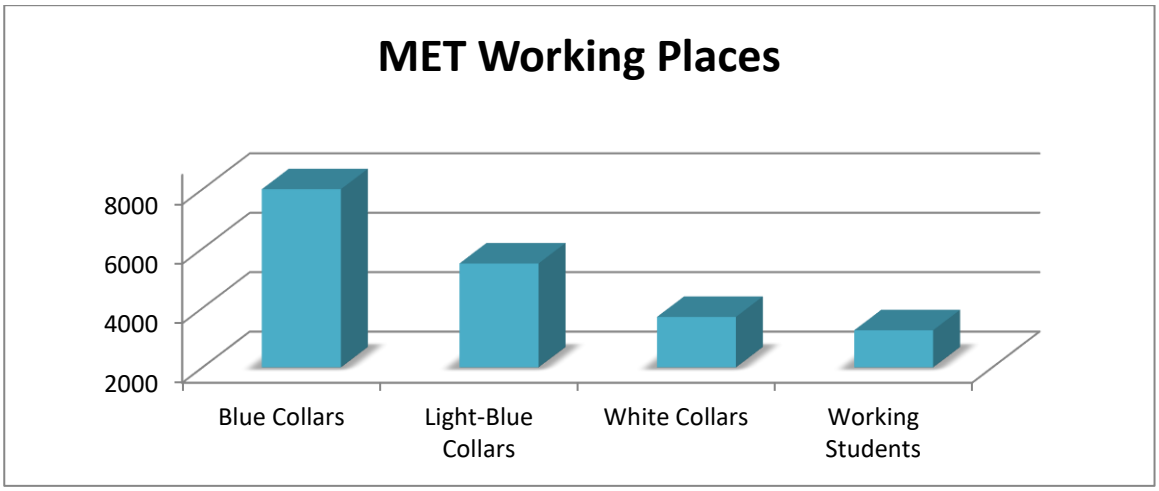
* People in DE SES group and in 15-19 and 55+ age group are closer to be sedentary.
* Men, people in B SES group and in 30-34 age group are closer to have sufficient PAL ratio.
* 45-54 age group and women are biased to have low PAL ratio.

Overview of MET Scores



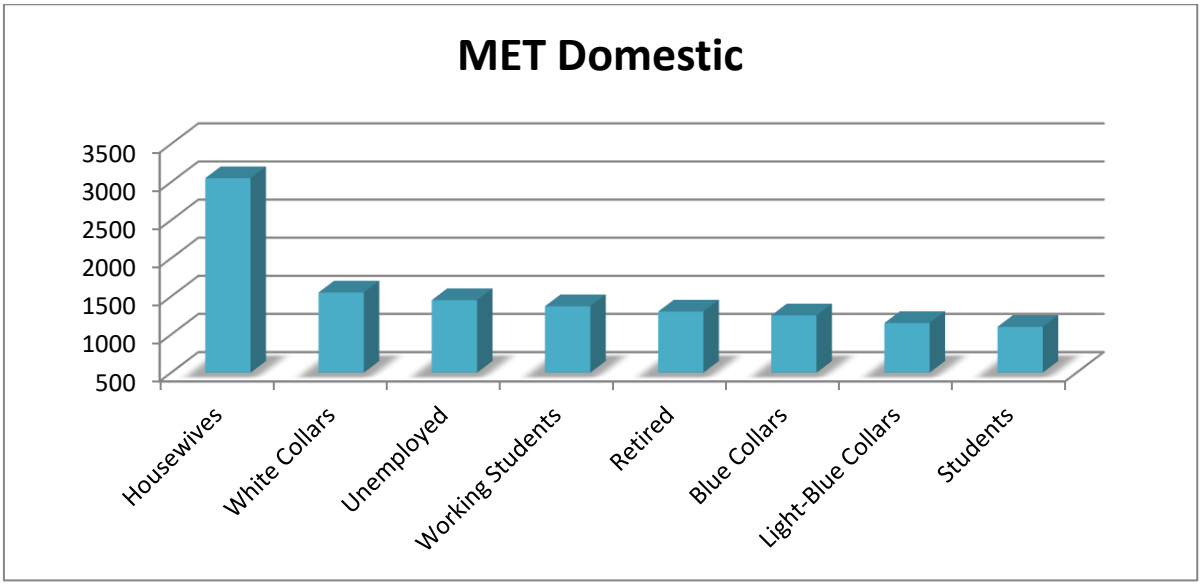
* When looking at the overview of MET scores, activities done in working place is higher than activities done in domestic, transportation and leisure time.
* MET Leisure score is remarkably low. People are not physically active in their leisure time.

MET with Working Places



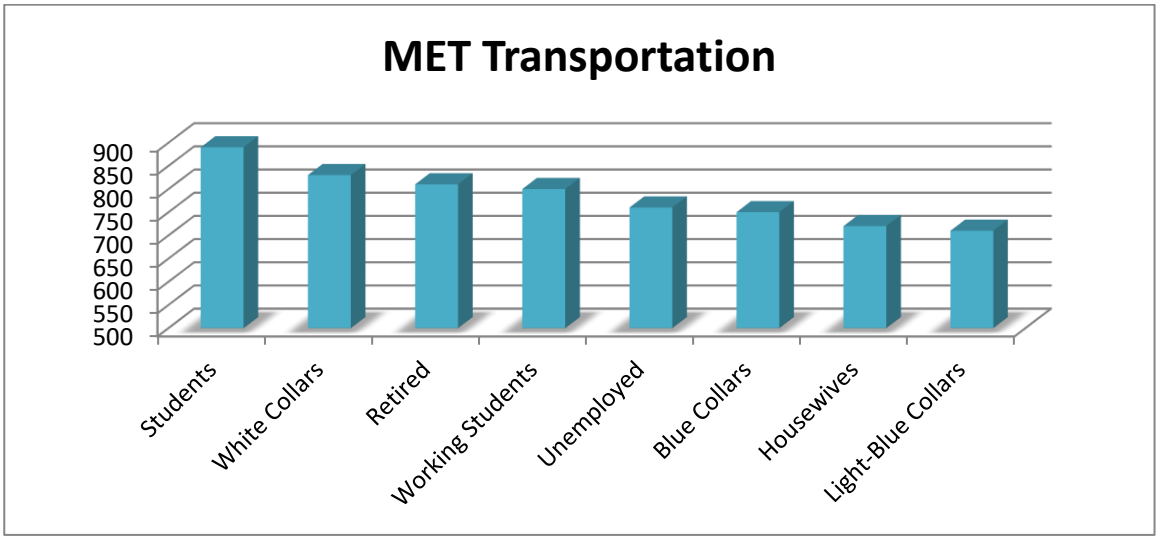
* When looking at MET scores in working places, blue collars have the highest MET score.

MET with Domestic



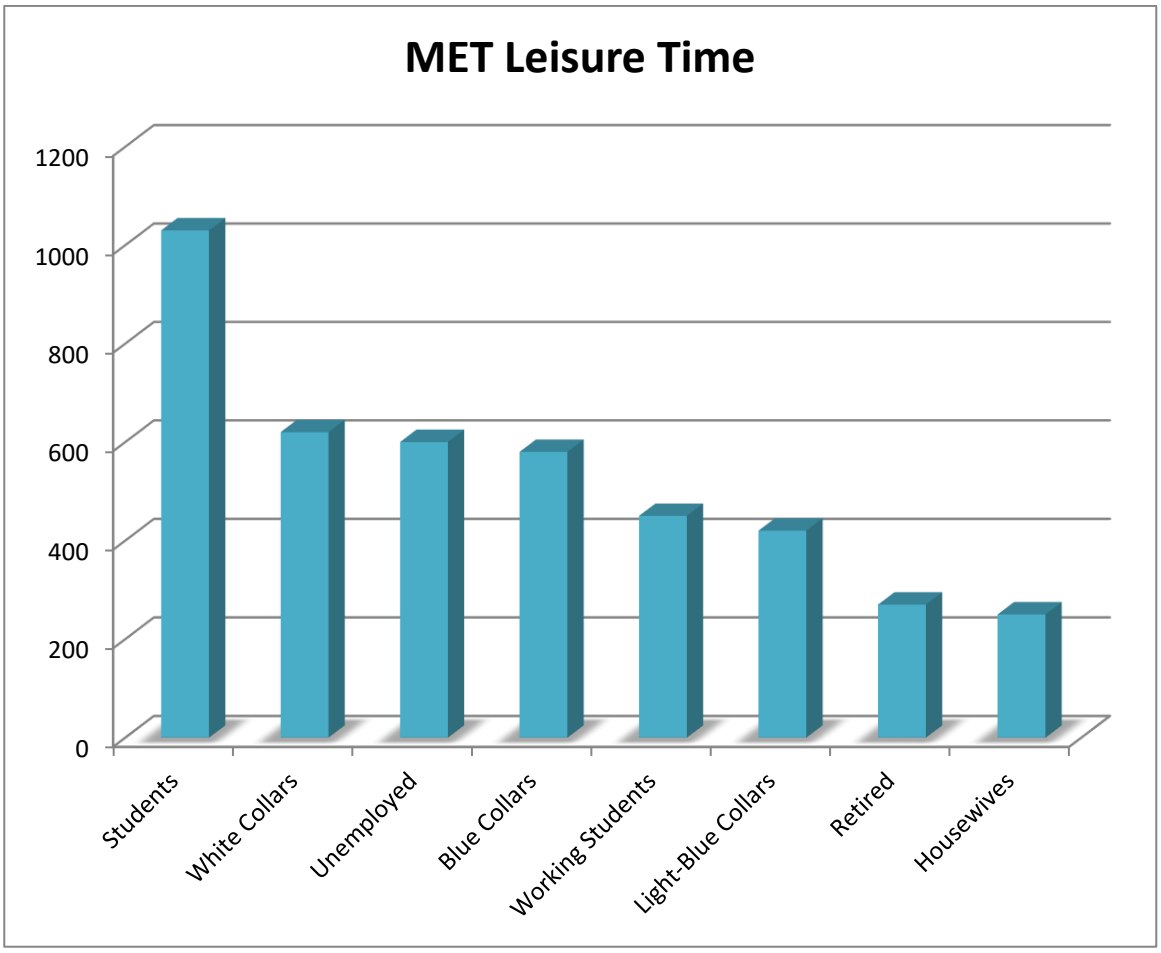
* According to MET scores measured with domestic activities, “Housewives” have the highest MET score.

MET with Transportation



* According to MET scores measured with transportation time activities, MET scores are low in every category and scores are not significantly different from one occupational situation to another.
* Every occupational situation has similar MET scores during transportation.

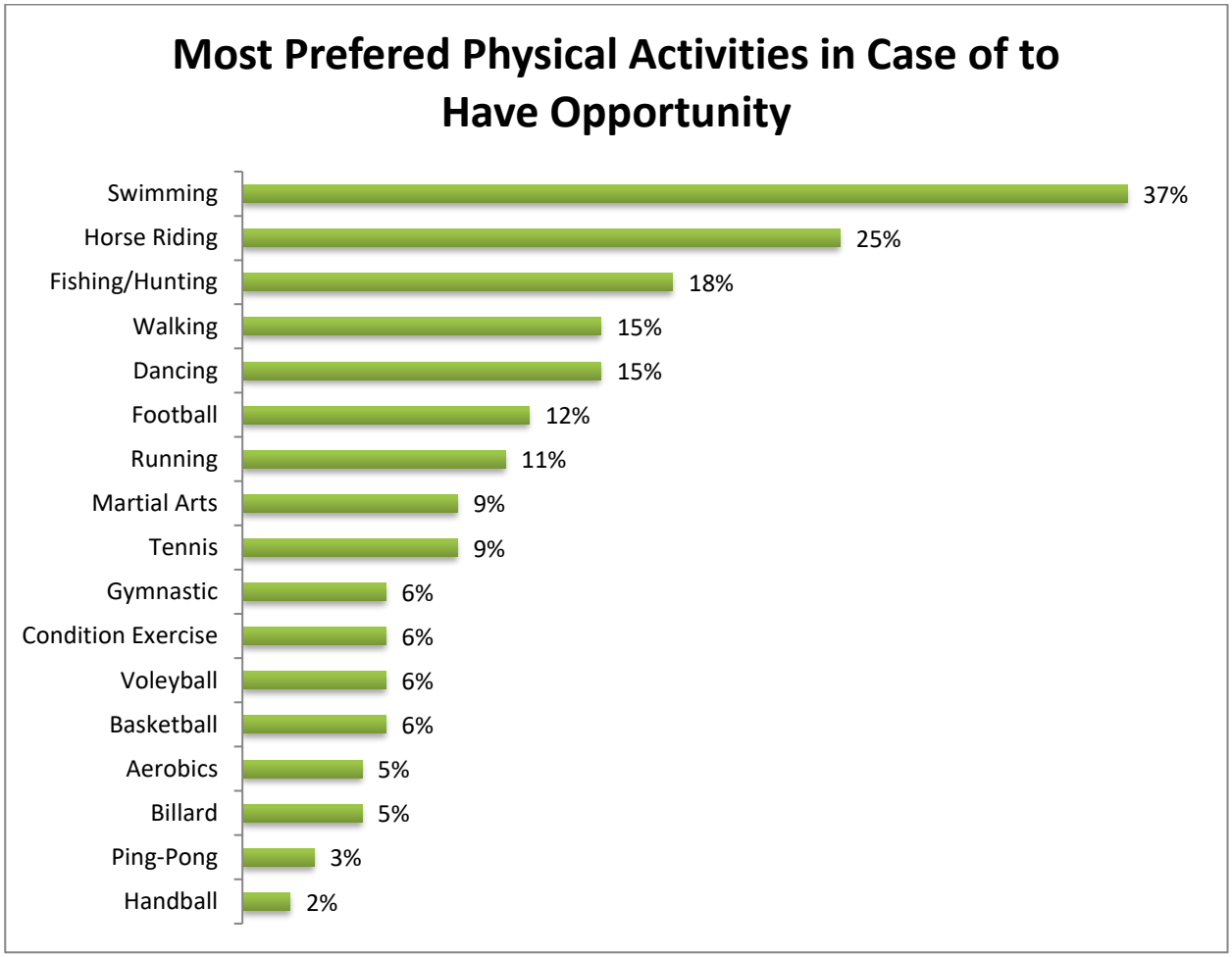
MET with Leisure Time



* When looking at MET scores during leisure time, “students” are the most active group.
* When looking at overall results, students are the most inactive group, but in leisure time they the most active group. We can say that the reason for being active only in their spare times of the most sedentary age group students is because most of their daily lives is going through with the school and the courses.

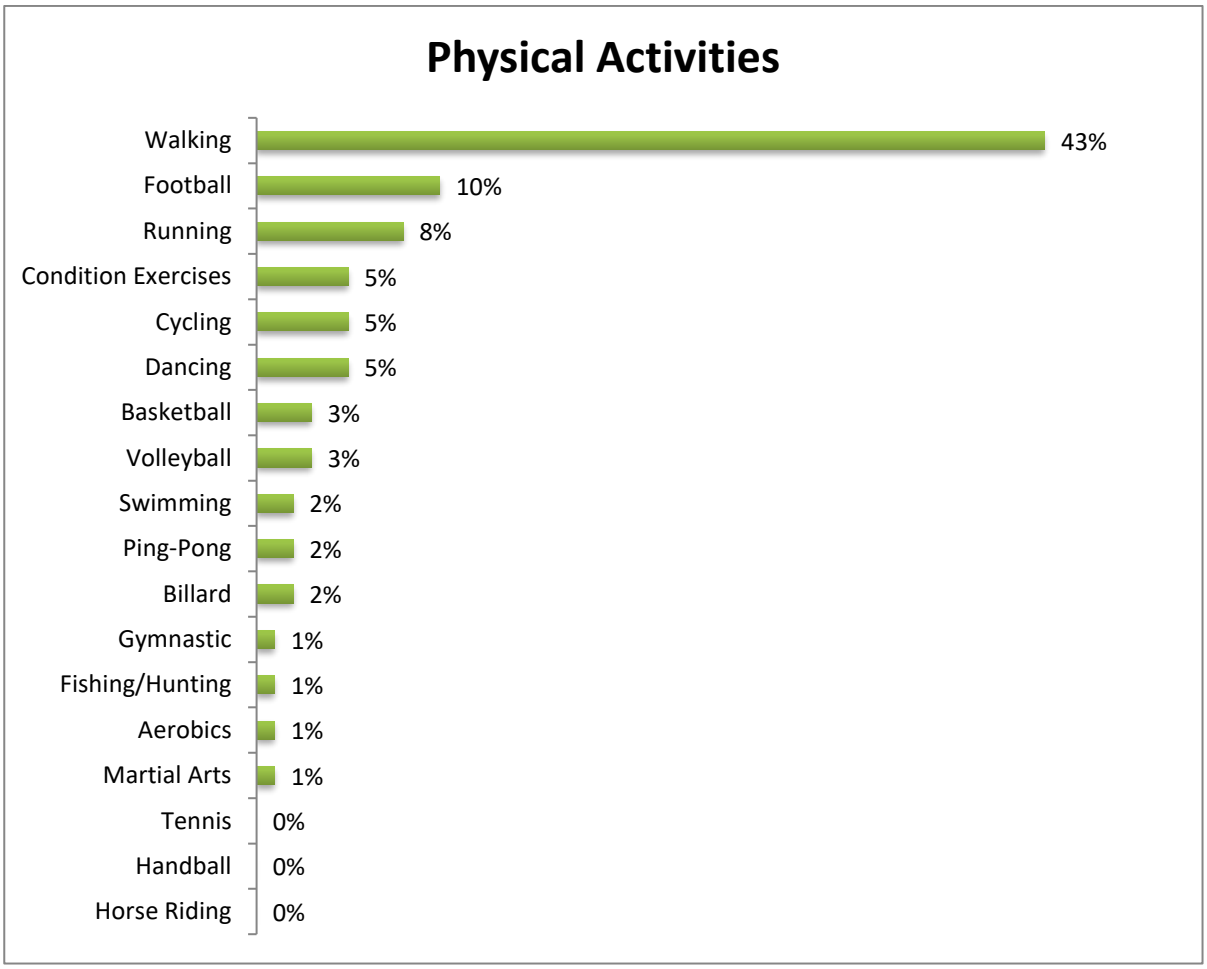
2. PREFERENCE FOR PHYSICAL ACTIVITY AND NUTRITION

Most Preferred Physical Activities in Case of to Have Opportunity



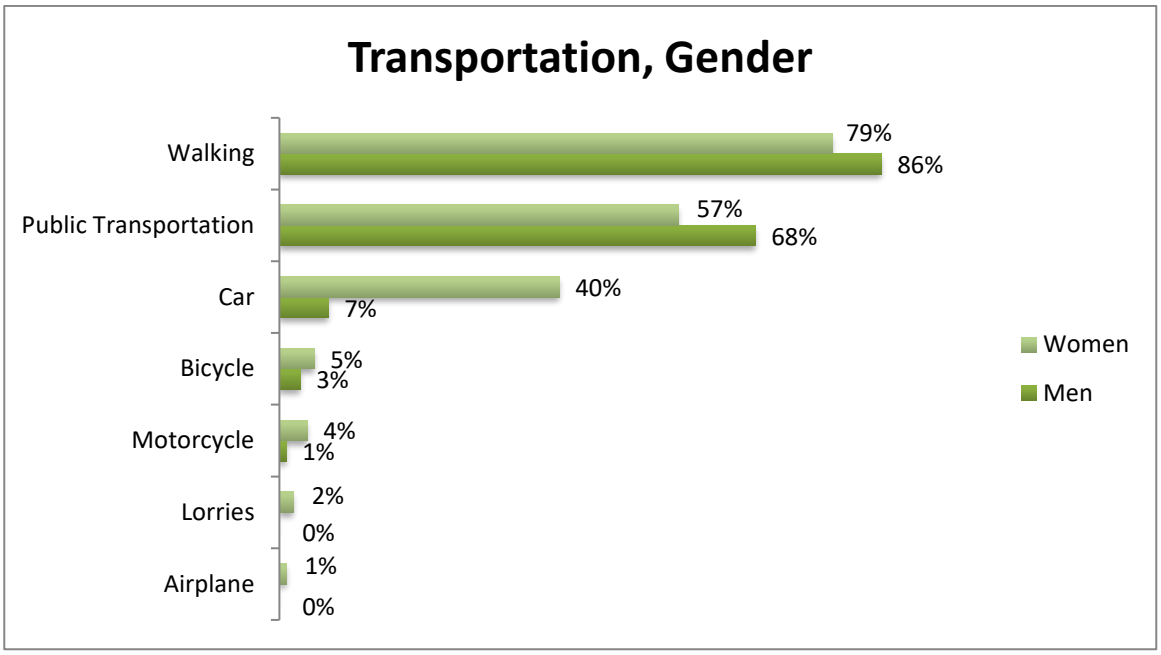
* Most people prefer to do swimming, horse riding and fishing/hunting activities if they have opportunity. Walking and dancing should not be underestimated too.
* Physical activity types are not various as sport branches.

Most Preferred Physical Activity Types



* Walking is significantly most preferred physical activity among others.

Transportation Preferences with Gender



* When looking at transportation preferences with gender, women and men are prefer to walk for tarnsportation.

3. BMI MEASURMENTS RESULTS GRAPHICS

What is Body Mass Index (BMI)?

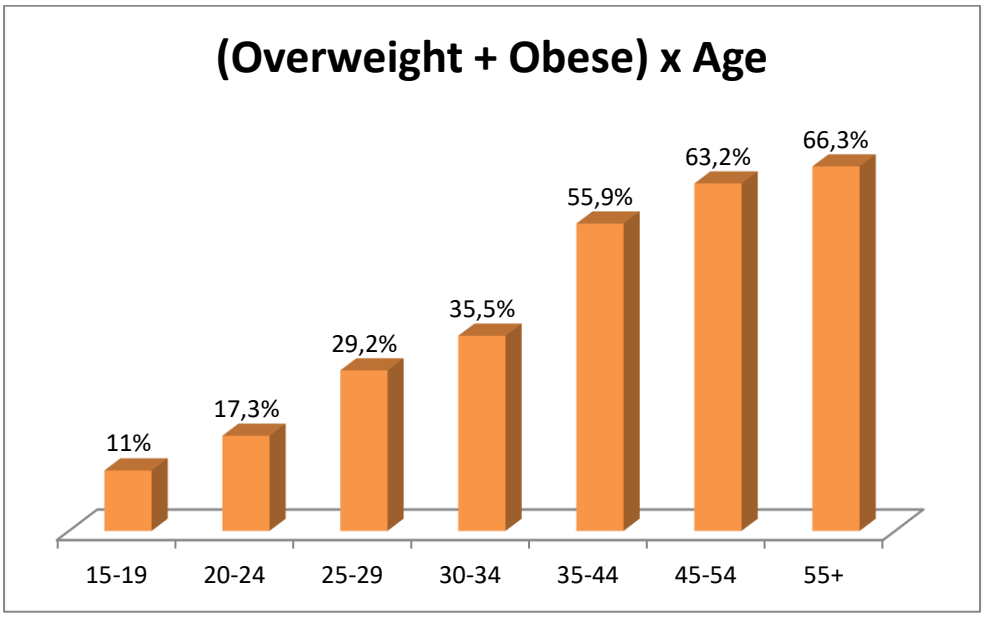
BMI basically compares a person's weight and height.

Calculated as: [BMI value] = weight (kg) / height^2 (m^2)

BMI categories:

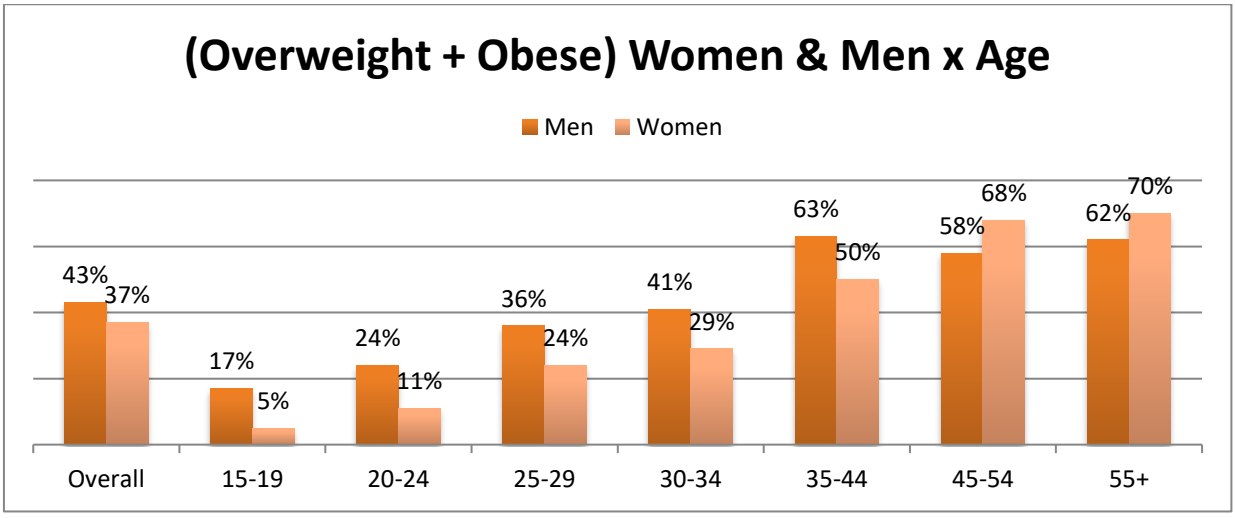
(1) **Underweight** (BMI < 18.5)
(2) **Normal** (BMI 18.5 – 25)
(3) **Overweight** (BMI 25 – 30)
(4) **Obese** (BMI 30+)

BMI Distribution with Age Groups



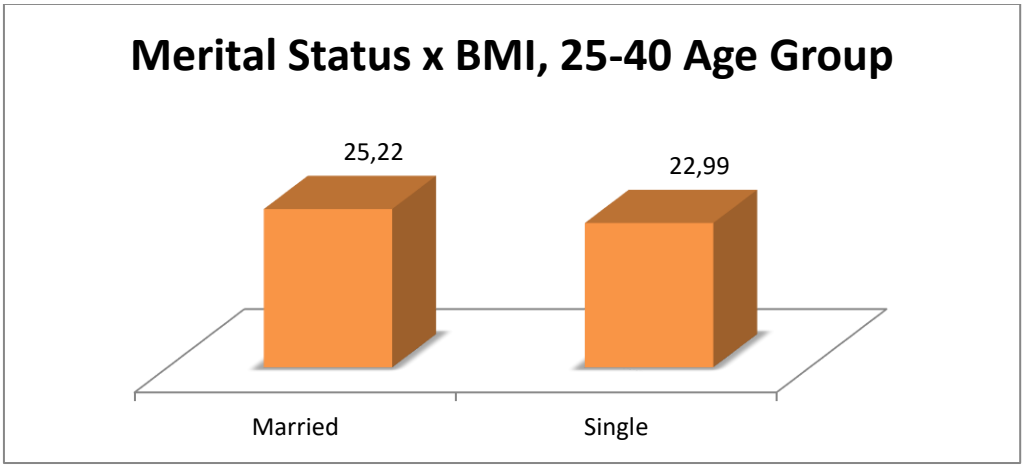
* Overweight and obesity increase with age.

BMI Distribution with Age Groups and Gender



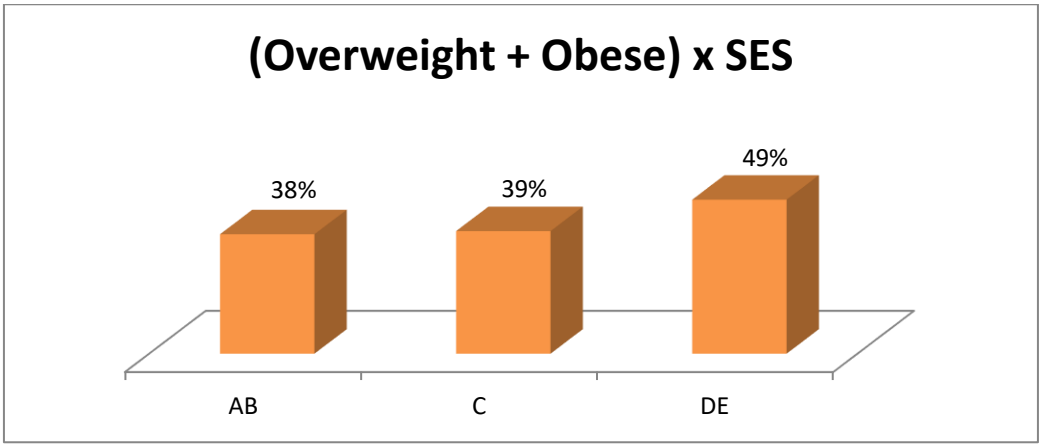
* Until the age of 44, men are more inclined to be overweight and obese. After the age of 45, women are more inclined to be overweight and obese.
* When looking at the age groups, there is two break points; 25 and 35. After these ages obese values are significantly increase.
* Obese and overweight values in women is higher in 45-54 and 55+ age groups.

BMI Distribution with Marital Status of 25-40 Age Group



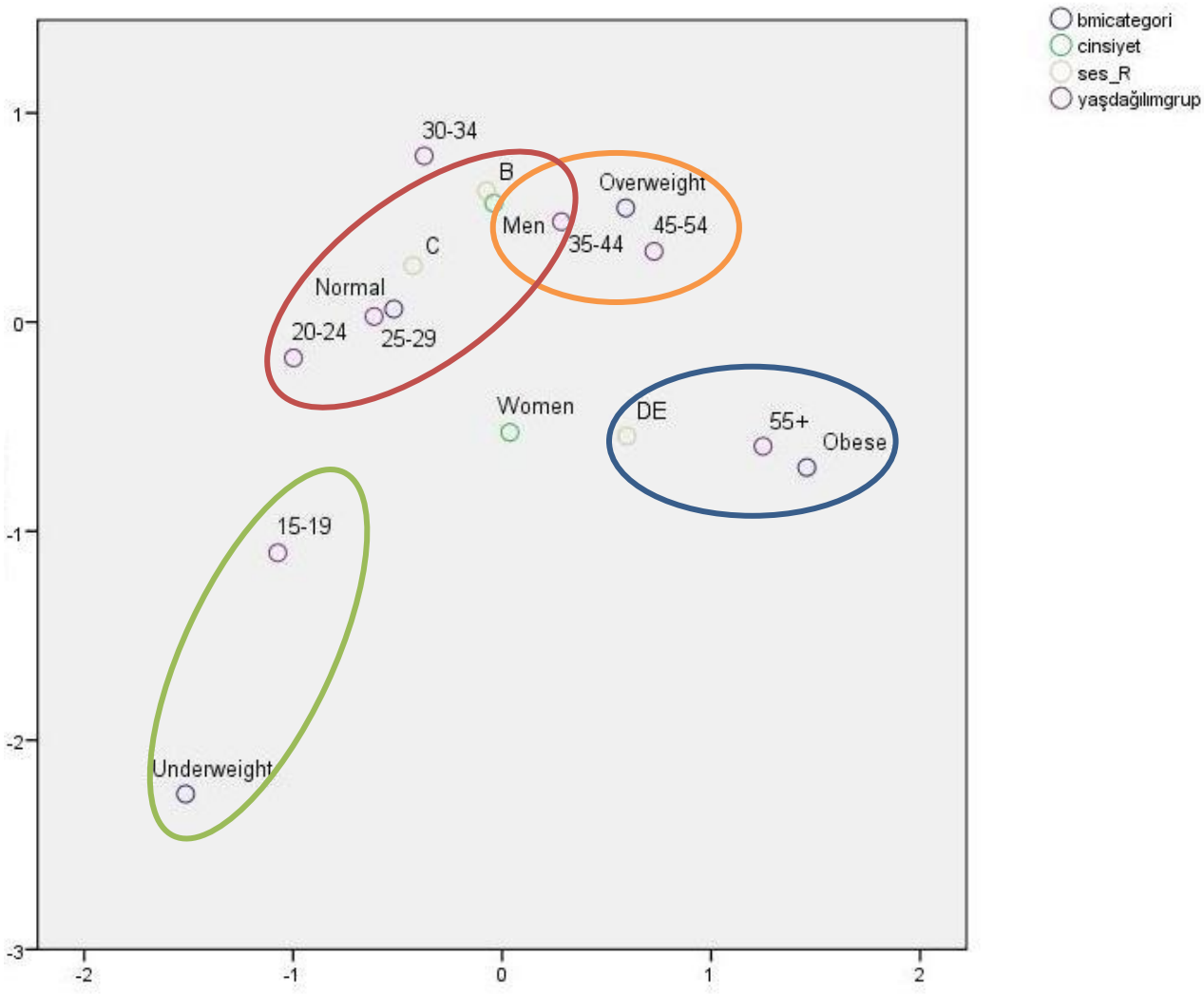
* BMI values of married people in 25-40 age group is higher than single people's BMI values.

Overweight and Obese Distribution with Socio-Economic Statuses



* Overweight and obesity is most frequently observed in DE SES group.

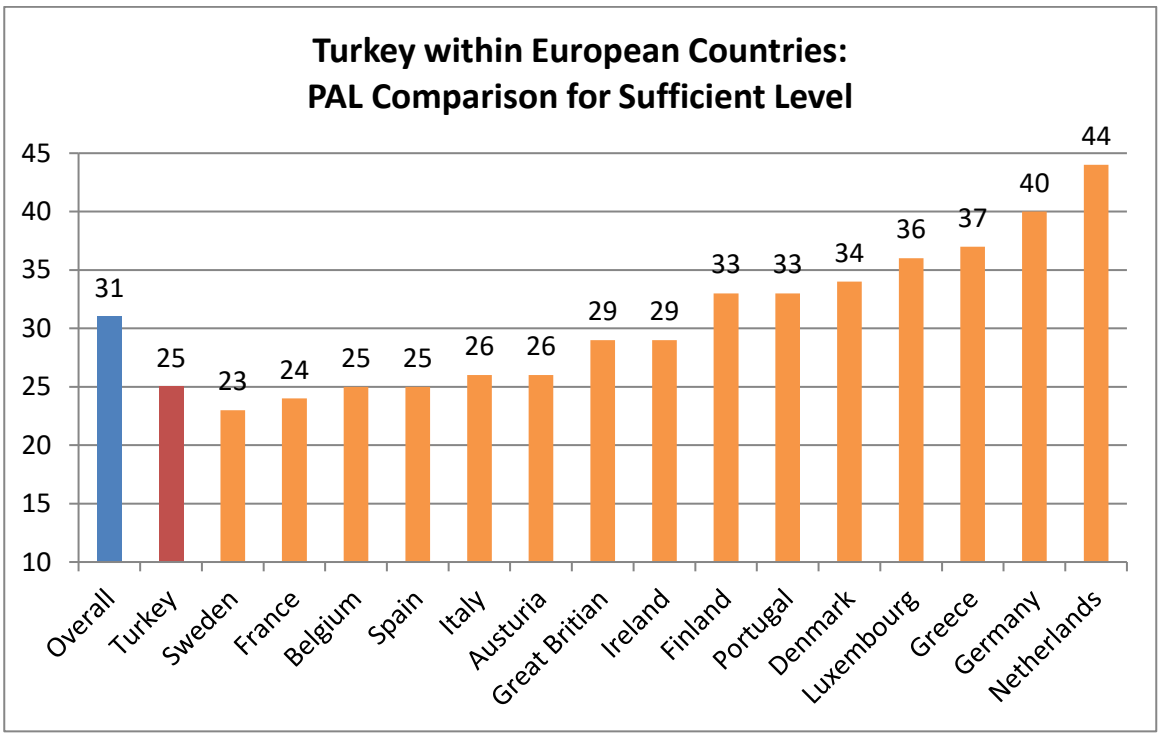
BMI Distribution with Socio-Economic Status, Gender and Age Groups



* People from DE SES group and 55+ age group are closer to be obese.
* People of 15-19 age groups are closer to be underweight.
* Men and members of 35-54 age group are closer to be overweight.
* Men, members of 20-29 age group and B and C SES groups are closer to be normal.

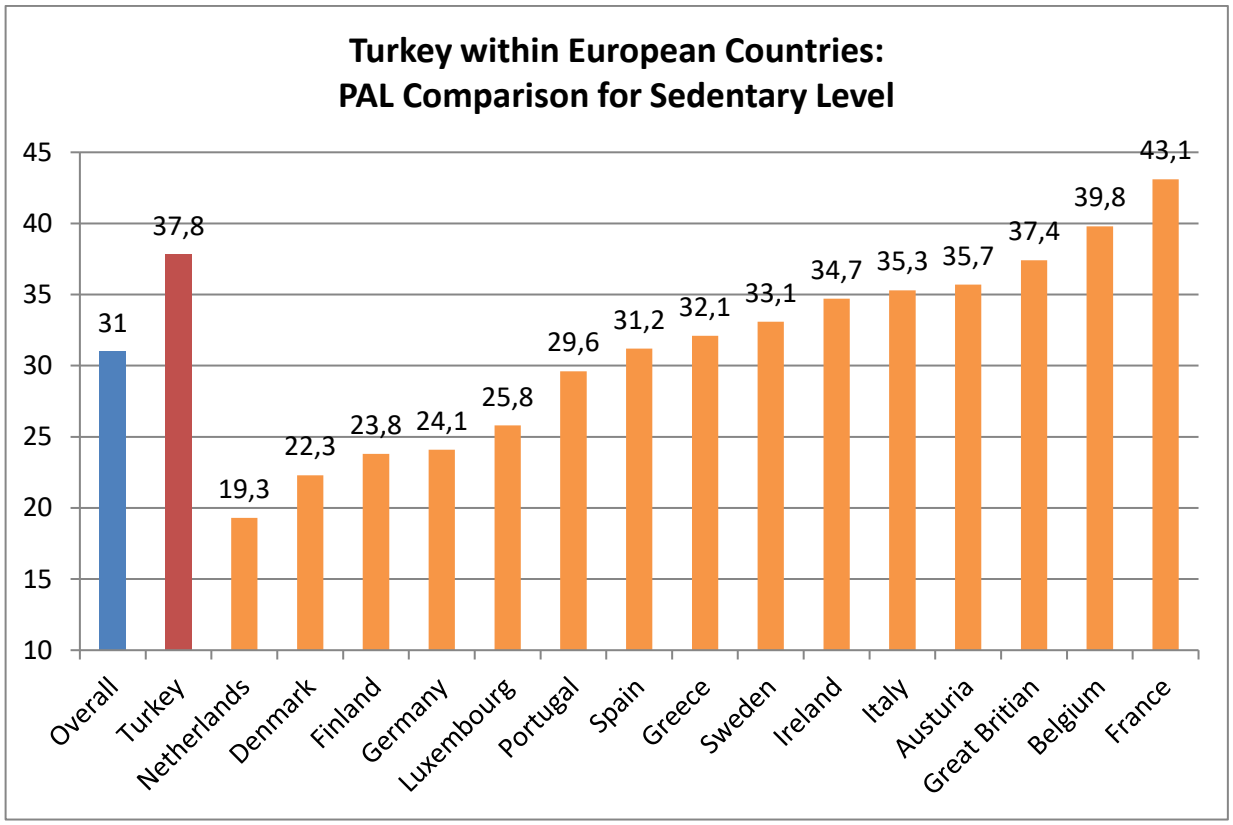
4. EUROPE AND TURKISH SOCIETY COMPARISONS

Europe Countries and Turkey Comparison for Sufficient PAL



* When we focus on sufficient PAL, Turkey is below the European average.
* Yet, it appears as an average Mediterranean country, very close to Italy and better than France and Spain.
* In overall, Turkey is better than Sweden and France.

Europe Countries and Turkey Comparison for Sedentary PAL



* For sedentary level of PAL, only two countries are worse than Turkey: Belgium and France.