

## ORIGINAL ARTICLE

# Lifestyles and habits in young people: analysis of Italian National Institute of Statistics database

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**Abstract.** The aim of this study was to evaluate healthy and unhealthy habits of young Italian people. A descriptive cross-sectional study was carried out on young Italian people, aged 15 to 34 years, taking into consideration data collected by Italian National Institute of Statistics (ISTAT) in 2018. Italy was divided in four areas, north, centre, south, and islands. The variables were grouped into the following categories: socio-demographic variables, overweight and obesity, alcohol and tobacco use, food consumption, and physical activity. ISTAT showed that 13% of young people in Italy were overweight, and 2.1% obese, 20% were smokers, being the highest percentage in the centre of Italy, and in men; 12% consumed alcohol more than once a week, being beer the favourite beverage. Alcohol consumption was higher in north of Italy. Nearly 80% of young Italian people had breakfast properly. Men consumed more meat than women, and women consumed more vegetables than men. Both men and women had equal consumption of cheese and fish. Physical activity was practiced by 37% of young people, prevailing in the north of the Country. ISTAT data suggest that healthy profile of young Italian persons should be taken into consideration in order to prevent development of noncommunicable diseases.

**Key words:** Italy, Young people, Healthy habits, Unhealthy habits, Overweight, Obesity

## Introduction

Health, according to the Constitution of the World Health Organization WHO (1), is defined as “a state of complete physical, mental and social well-being, and not just the absence of conditions or diseases”. Lifestyles are major determinants of health, which integrate healthy and unhealthy habits and behaviors (2). The loss of healthy lifestyles in today’s society causes public health problems (3).

Economic impact of noncommunicable diseases (NCDs) on health systems have been increasing, therefore it is important to emphasize that early interventions for risk reduction are necessary, aiming at preventing changeable unhealthy factors (4). Reducing

prevalence of unhealthy behavior in young population is cost-effective, decreasing the burden of chronic disease as well as costs for their management (4). In the same way, WHO in 2018 stated that adult obese people account for 23% of the population and obese adolescent people aged 10-19 are 10% (males 12% and females 8%) with rising projected linear trends. Physical inactivity involves 45% and tobacco use 22% of adult population (5).

The environment and healthy behaviors are fundamental in order to prevent NCDs, especially if prevention starts early in the course of life (5). NCDs represent 71% of all causes of global death. Unhealthy habits like exposure to tobacco smoke, physical inactivity and harmful diet, increase the risk of cardiovas-

cular diseases such as heart attack, stroke, pulmonary diseases such as respiratory failure, asthma, chronic obstructive pulmonary disease, diabetes and cancer (5).

WHO reported that Italian mortality due to cardiovascular disease is 36%, cancers 27%, chronic respiratory disease 6%, and diabetes 3%. NCDs account for 91% of all deaths (640,000 out of 59,430,000 people) (5).

The aim of this study was to evaluate healthy and unhealthy habits (sports practice, nutrition, overweight, obesity, tobacco and alcohol consumption) of young Italian people (15-34 years) from the Italian Institute of Statistics (ISTAT) database in 2018.

## Methods

A descriptive cross-sectional study was carried out using the database of health indicators in Italy. This database can be consulted by the Health For All (HFA) software provided by the WHO available at: <https://www.istat.it/it/archivio/14562>. This program allows to represent statistical data in graphical and tabular form, and to perform simple statistical analyses. In carrying out this study, the data belonging to the year 2018 were analyzed, evaluating young people living in Italy (north, south, east, west, and islands) with age between 15 to 34 years. The database was structured so that it could be consulted by workers, researchers and students working in the health field.

The ISTAT (6) is a public research organization, producing independent statistics aiming at increasing knowledge about different items including health. ISTAT interacts with the academic and scientific organizations. It started its activity in 1926, when statistics were interpreted as a tool for understanding phenomena using surveys carried out by a single independent system. In 2016, ISTAT was re-organized improving supply and quality of produced information, optimizing the effectiveness and efficiency of all activities. ISTAT analyzes environmental, economic and social dimensions at various levels of geographical details. Privacy of respondents and confidentiality of data are protected by ISTAT carrying out all activities in a transparent, and independent manner. ISTAT is a member of the European Statistical System and works with other organizations within the international statistical system (6).

## Variables

The variables analyzed in the present study are grouped into the following categories:

- Sociodemographic variables: age rank, sex, geographical distribution (north, center, south, and islands of Italy);
- Overweight, obesity;
- Alcohol and tobacco: smokers, big smokers, average number of cigarettes per day, alcohol consumption more than once a week, regular wine consumption, wine consumption of more than 0,5 l a day, regular beer consumption, beer consumption of more than 0,5 l a day, people not consuming wine, beer, alcohol;
- Food consumption variables: people having adequate breakfast, main meal dinner, people consuming beef a few times a week, fish a few times a week, cheese at least once a day, vegetables at least once a day;
- Physical activity variables: people practicing sport on an ongoing basis, occasionally, persons practicing some physical activity, people not practicing sport or physical activity.

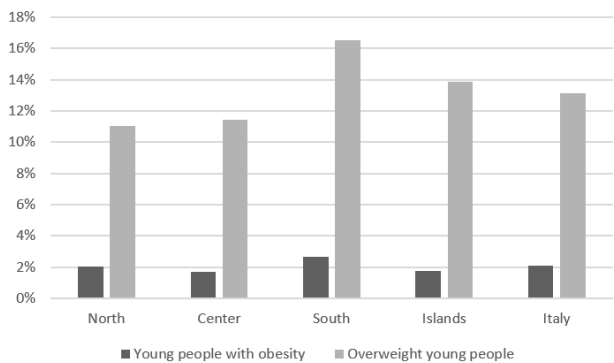
## Results

### *Overweight and obesity*

Overall, in 2018, 13% of young people in Italy were overweight, and 2.1% obese. South of Italy was the area where there was the highest percentage of obese and overweight young persons, exceeding the country's average, while in the central area and the islands percentages of obese people were lower. Taking into consideration overweight, northern Italians showed the lowest prevalence (Figure 1). Both obesity and overweight had higher frequency in men than in women (Table 1).

### *Alcohol and Tobacco*

In 2018, nearly twenty percent of young people were smokers, and the average number of cigarettes that they smoked per day was 8.2. The highest percentage of smokers was in the center of Italy, and the highest consumption of cigarettes per day was in the



**Figure 1.** Data from ISTAT showing prevalence of overweight and obesity in Young people in the different areas of Italy

islands (10.4 cigarettes per day), above the average Italian mean (Table 2). Men (23.5%) smoked more than women (15.7%), and also consumed more cigarettes

per day than women (8.9 vs 7.1). The islands were the area where men smoked more, whilst women smoked more frequently in the center of Italy. Around 12% of young Italians consumed alcohol more than once a week, drinking more beer (5.9%) than wine (5.1%). The area of Italy that consumed more alcohol was north of Italy, being consumers 14.9%, well above the average of alcohol consumers in the country (11.8%). In south of Italy young people did not drink so much alcohol, being the percentage nearly half of that recorded in the north of the country (7.7%). Wine was drunk more regularly in central Italy, and beer in the islands. Highlighting the consumption of more than half a liter of wine per day, the south of Italy stood out, with 0.8% of the population, followed by the north (0.6%). Young people in the islands had the highest consumption of

**Table 1.** Sex difference in lifestyles of young Italian people

	Age	Men	Women
Young people with obesity (%)	18-24	2.6	1.7
Young people with overweight (%)	18-24	17.7	8.3
Smokers (%)	15-24	23.5	15.7
Alcohol consumption more than once a week (%)	15-34	15.6	7.9
People not consuming wine, beer, alcohol (%)	15-34	22.5	36.6
People having adequate breakfast (%)	15-34	76.6	81.4
People having main meal dinner (%)	15-34	27.1	23.3
People consuming beef a few times a week (%)	15-34	73.3	60.3
People consuming fish a few times a week (%)	15-34	57.5	56
People consuming cheese at least once a day (%)	15-34	20.9	19.5
People consuming vegetables at least once a day (%)	15-34	41.6	52.7
People practicing sport on an ongoing basis (%)	15-34	43.6	31.6
People who do not practice sport or physical activity (%)	15-34	19.8	26.3

**Table 2.** Tobacco and alcohol consumption in Young Italians

	Age	North	Center	South	Islands	Italy
Smokers (%)	15-24	20.3	22.3	17.2	19.5	19.7
Heavy smokers (%)	15-24	1.3	-	0.4	1.5	0.9
Average number of cigarettes per day	15-24	7.9	7.8	8.1	10.4	8.2
Alcohol consumption more than once a week (%)	15-34	14.9	11	7.7	11.4	11.8
Regular wine consumption (%)	15-34	5	5.8	5.3	3.9	5.1
Wine consumption of more than 0.5l per day (%)	15-34	0.6	0.4	0.8	0.1	0.6
Regular beer consumption (%)	15-34	5.8	4.6	6.2	7.4	5.9
Beer consumption of more than 0.5l per day (%)	15-34	0.7	0.4	0.5	1.1	0.6
People not consuming wine, beer, alcohol (%)	15-34	27.5	29.4	32.5	29.2	29.4

more than half a liter of beer per day (1.13%). The highest percentage of not-drinking alcohol young people was in south of Italy, being 32.5%. Sex evaluation showed that men consumed more alcohol than women moreover, habitual consumers of wine and beer were mainly men, highlighting greater consumption of beer than wine in men, but a higher consumption of wine in women. The percentage of people who never drank alcohol were women (36.6 vs 22.5%).

### Nutrition

ISTAT data reported a high percentage of young people eating breakfast properly (79%) (Table 3). In 2018, young people ate meat (66.9%), fish (56.8%) and vegetables (47%) habitually. The central area of Italy was the one that showed the highest percentage of young people eating breakfast properly (81.4%), above the average of the Country, whilst in the islands the percentage was 74.8%. In the north of Italy young people considered dinner as the main course, while in the south area and the islands the percentage was lower. Consumption of meat was higher in the islands (71.4%), exceeding the average of the country (67%). Consumption of fish was higher in the central and the south areas of the Country. The highest consumption of cheese was in the north, consumption of vegetable had higher frequency in the central and north areas

(53.6 and 51.3%, respectively). Women ate an adequate breakfast in 81.4%, men in 76.7%. There was higher percentage of men consuming meat several times a week (73.3%) than women (60.3%). Consumption of fish and cheese several times a week was similar in men and women. Consumption of vegetables at least once a week was higher in women (52.7% vs 41.6%).

### Physical activity

In 2018, sport was practiced continuously by 37.7% of young Italians (Table 4). Sport was practiced occasionally by 13.9% of young people, however 25% of the population practiced some physical activity. On the other hand, 23% of Italian young persons had sedentary behavior. In the north of Italy, more than 40% young people practiced sport continuously, and this percentage decreased in the center and south areas, reaching the minimum in the islands (32.6%). In the islands there was the highest percentage of young people not experiencing any sport or physical activity (35.5%), well above the Italian average (23%). The percentage of people practicing sport continuously was higher in men (43.6%) than women (31.6%). Women preferred to exercise occasionally (76%). The percentage of people not practicing sport or physical activity was higher in women (26.3%) than men (19.8%).

**Table 3.** Nutrition in Young Italians

	Age	North	Center	South	Islands	Italy
People having adequate breakfast (%)	15-34	79.3	81.4	78.6	74.8	79
People having main meal dinner (%)	15-34	31.4	30.5	16.2	15	25.2
People consuming beef a few times a week (%)	15-34	65.8	68.4	65.6	71.4	66.9
People consuming fish a few times a week (%)	15-34	54.9	59	58.9	55.6	56.8
People consuming cheese at least once a day (%)	15-34	23.4	20.4	13.6	23.3	20.2
People consuming vegetables at least once a day (%)	15-34	51.3	53.6	39.1	38.9	47

**Table 4.** Sports practice in Young Italians

	Age	North	Center	South	Islands	Italy
People practicing sport on an ongoing basis (%)	15-34	41.8	37.9	33.3	32.6	37.7
People practicing sports occasionally (%)	15-34	16.3	14.1	11.1	11.1	13.9
People practicing some physical activity (%)	15-34	27.2	24.6	24.1	20.5	25.1
People not practicing sport or physical activity (%)	15-34	14.7	22.7	31	35.5	23

## Discussion

The present study derived from data published by ISTAT, shows that risk factors for NCDs are frequent in Italian young people. In 2008, Moreno et al. focused on the main gaps on healthy lifestyle in European adolescents, and they found that comparison on food intake was difficult to perform, due to lack of homogeneous data. Eating attitudes, food choices and food preferences were not well understood as well as patterns of physical activity and physical fitness, knowledge on effective intervention methodologies for healthier lifestyles were major points that needed to be further investigated (7). In order to decrease the burden of NCDs it is necessary to find out the right way to intervene in young people for making them aware of the importance of a healthy lifestyle. In 2008, Calza et al. evaluated the prevalence of overweight and obesity and their relationship with 14 groups of chronic diseases in an Italian population using data from the Italian National Survey collected in 1999-2000. More than 52,000 families were enrolled. They found an increasing prevalence of overweight and of several chronic conditions in obese or overweight individuals. Weight excess and chronic disease were positively associated in both sex, moreover prevalence of cardiovascular diseases, diabetes and chronic respiratory diseases were higher in obese than in normal-weight individuals in the age group under 45 years (8). ISTAT data showed that Italian young people resulted to be overweight in 13% and those classified as obese were 2.1%, prevalence lower than data recorded in young people living in Spain (9) and Turkey (10). Specifically, in Balearic Islands, the prevalence of overweight increased from 21.0 to 24.8% and young female subjects showed an increasing prevalence of overweight and excessive weight, from 14.1 to 20.9% and from 20.9 to 28.6%, respectively, during the period 2000-2010 (9). In 2017, a Turkish study reported a prevalence of overweight and obesity in adults of 34.6% (39.1% in men, 29.7% in women), and 30.3% (20.5% in men, 41.0% in women) respectively (10). On the other hand, an Italian study from the region Lazio (central Italy), evaluated a representative sample of adolescents aged 15-16 years, recruited in secondary schools between 2011 and 2012. Authors reported that percentages of

overweight and obesity were 15.4% and 7.9%, respectively, with significant difference between males and females (19.1% vs. 12.6% for overweight and 11.1% vs. 5.3% for obesity, respectively), and suggested that sex, school municipality, mother's employment status, and family structure had a significant effect on weight (11).

Taking into consideration geographical areas, the regions with the highest percentage of overweight and obese young people are in south of Italy. It has been reported, that higher rates of obesity and overweight are associated with low socioeconomic status (12). North of Italy shows greater socioeconomic resources than the South, however, higher regional expenditure was not associated with better reported or perceived quality in health services (13). Latif (14) found that unemployment rate and increasing body mass index had a significant positive impact on the probability of being severely obese. Minelli et al. (15) reported that temporary workers, first-job seekers and unemployed individuals had a worse self-reported health status than permanent employees, especially if they were males, young, and living in the center and south of Italy. It is interesting to notice that male young people are more obese and overweight than female ones, a finding that could be related to a better way of eating of the latter group. Unfortunately, we did not collect data about employment.

Lugo et al. (16) evaluated 2 Italian surveys on smoking performed in 2013 and 2014, on a total sample of more than 6000 subjects aged  $\geq 15$  years. Smokers were 21.1%, men were 25.5% and women 17.0%. Prevalence of current smoking among young people was 19.9% (21.7% of male participants and 18.0% of female participants). Data from ISTAT show that about twenty percent of young people in Italy smoke. In a similar European country, such as Spain, prevalence of consumption of tobacco in young people aged 15-24 years was 25.4% (17). Tramacere et al. (18) stated that current smoking was less prevalent in higher than in lower educated participants, and in northern than southern Italy, suggesting that persons with less privileged socio-economic characteristics should be considered target populations for tobacco control. Again, our analysis did not include socio-economic status.

ISTAT data suggested a higher percentage of smokers in the north of Italy, however the average number of cigarettes per day was lower. Male young people

smoked more than the female young population, on the other hand, Mereu et al. (19) suggested that Italian population did not think that smoking could be a socially acceptable behavior, they reported a decline in the prevalence of smokers for both sexes, however low educational levels were still associated with smoking.

Cooke et al. (20) compared consumption of alcohol analyzing a survey of university students attending universities in Denmark, England, Germany, Italy, Portugal and Switzerland. Totally, they evaluated more than 2,000 students aged 18-25 years. They concluded that European university students had low risk of harmful alcohol consumption, however, students from Northern European countries had significantly higher consumption than students from Central and Southern European countries. ISTAT data reported that 12% of Italian young people consumed alcohol more than once a week and they preferred to drink beer, and that male young people consumed more alcohol than female young population.

Drinking alcohol could be related to the ease of buying it individually, in small quantity and especially considering its low cost, in fact Wagenaar et al. (21) related alcohol consumption with alcohol tax or price. Moreover, price was related with heavy drinking, suggesting that these relationships should be taken into consideration especially for the risk associated with compulsive consumption. Dey et al. (22) concluded that beer preference could be connected with risky drinking patterns and illicit drug use, therefore cheap spirits like beer, should be taken into consideration in order to reduce total alcohol consumption and the negative consequences associated with it.

Young Italians like breakfast in 79% of cases, a practice included in the Mediterranean diet, and ISTAT data appear to confirm such a habit. Mathiyalagen et al. (23) reported that breakfast skippers had higher fat intake, lower intake of proteins, vitamins and minerals than breakfast consumers and that their body mass index was higher, suggesting an association with the development of overweight and obesity.

Data from ISTAT showed that the highest consumption of meat was recorded in the area of islands (71.4%). Farchi et al. (24) reported that deaths avoidable associated with reduction of beef consumption could be between 2.3% and 4.5% for colorectal cancer,

and between 2.1% and 4.0% for cardiovascular disease, underlying higher benefits in Northwestern areas and among males. They highlighted that 5% and 6.4% of colorectal cancer and cardiovascular diseases mortality could be spared if the Italian population consumed the advised quantity of processed meat. Male young individuals appeared to consume more meat than female ones. Daniuseviciute-Brazaite and Abromaitiene (25) evaluated baseline dietary intake of university students, differences in healthy eating between sex, and relationship between lipoproteins and anthropometric data. They found that consumption of red meat, poultry, sausages, fish, cheese and fast food was higher in males and in the same sex total cholesterol, triglycerides, and low density lipoprotein cholesterol were correlated with body weight and body mass index. ISTAT data showed that fish consumption was similar in both sex, and consumption of vegetables was higher in females, confirming higher degree of awareness about healthy diet and weight control. In the north of Italy and the islands consumption of cheese was higher than in the south, highlighting the decrease in cheese consumption in the south area, despite being a productive zone. Zingone et al. (26) reported that female subjects and underweight ones drank more lactose-free milk than milk containing lactose, although, they consumed dairy products quite frequently.

In north of Italy young people practiced more physical activity than those living in the south, data that could be associated with lower prevalence of overweight and obesity, although Wiklund (27) suggested that consistent decline in daily energy expenditure could not be the only cause of obesity. It has been reported that European young people preferred sedentary activities, with insufficient or nonexistent engagement in physical activities (28). Moreover, a study from Finland suggested that social background could influence young people's daily diet more than lifestyles. Authors found that 15-year-old adolescents from households with higher educational level, had frequent meals at home and at school, consuming recommended food items more often, on the contrary young people with a more street oriented lifestyle and a more commercialized leisure time had higher intake of fast food and sweets (29).

## Conclusions

In conclusion, ISTAT data indicate a relatively low percentage of young Italians with obesity, showing higher prevalence in the south area of Italy and in men. There is a higher percentage of smokers in northern Italy and in men, 12% of young Italians drink alcohol more than once a week and they prefer to drink beer. Italian young people eat breakfast properly, and they prefer, meat, fish and vegetables. Eating breakfast properly is related to a lower rate of overweight and obesity. The highest consumption of meat is recorded in the islands, and men consume more meat than women. Fish consumption is similar in both sex, and vegetable consumption is higher in women. Nearly 40% of young Italians practice physical activity, with higher prevalence in northern Italy.

**Conflict of interest.** No potential conflict of interest relevant to this article was reported by the authors.

## Acknowledgements

This work has been supported, in part, by a Research Grant from the University of Ferrara, (Fondo di Ateneo per la Ricerca Scientifica – FAR - 2020, Prof. Fabio Fabbian).

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