

Height and Body Composition of Adolescents from the Apulia Region

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Introduction

Nowadays we observe a rapid change in body size of the Italian population, particularly of young people: a phenomenon resulting from the economic and demographic development of the country – such as the growing mobility of the population, and the improvement of nutritional and health standards. Lifestyles have also changed, and this positive trend is accompanied by an extensive use of private and public transport, in towns which are getting larger -, while youngsters' free time is increasingly devoted to television, computer and videogames. In the meantime, the nutritional habits of teenagers, conditioned by advertisings, are spoiled by an excessive use of junk food. Consequently, overweight and obesity are widespread, particularly in Southern Italy, as we were able to prove using a survey carried out a decade ago. At the same time, body height has increased in comparison to previous generations. These findings encouraged us to undertake a follow up of the earlier research, involving pre-adolescents and adolescents of the Apulia region.

Materials and Methods

We report herewith the preliminary data relative to an anthropometrical and behavioral survey involving the students of Middle School (MS) "Massari – Galilei" and the Scientific High School (SHS) "G. Salvemini" of Bari. We collected the most important anthropometrical and bio-impedance analysis data, but in this paper we limit ourselves to report the first results relative to height, weight and BMI.

The research was carried out inside the schools, with the approval of institutions, families and subjects, and the data will be handled following the privacy rules.

Results

MS, Bari (60MM – 58 FF). Males from Bari aged 11, 13 and 14 are taller than adolescents measured in Barletta

in 2000-01, and also taller than the CHS (Classic High School) students of the same age. Males from Bari also have a higher weight and BMI. Females height instead is similar or slightly superior to that of Barletta females of the same age, while it is lower than that of the female CHS students when they were of the same age. Girls' weight and BMI are always higher.

SHS, Bari (125MM – 115FF). Male students of the SHS in Bari are not as tall as those of the Classical High School (CHS) students measured 10 years ago, and similar to that of the students of the Professional Institute (PI), who also show higher weight and BMI values. Also the height of the female students of the SHS - at 16 and 17 years – is lower than that of the coevals of the CHS. Female weight and BMI mean values appear to be within the norm – or slightly above it (BMI 23.1 at 17 years) – even if some females' BMI is quite high (43.7).

Secular Trend - In pre-adolescent males the growth *spurt* seems more precocious and in the MS students the height averages are higher than that of the coevals measured in previous years (Fig. 1) (Montanaro and Nicolini, 1979;

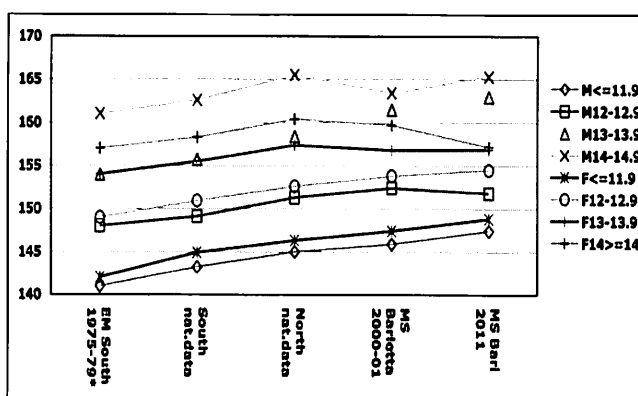


Fig. 1. Height increase in pre-adolescents in the last three decades. * EM = Ente Moda.

Cacciari et al., 2002; Corvasce and Tommaseo Ponzetta, 2002; Tommaseo Ponzetta et al., 2008). However, this trend is not so evident in females. Starting at age 16, male and female height of Bari SHS students is higher than that of the coevals of the 70s – both of Northern and Southern Italy – but is still lower than that of the students of Barletta CHS measured in 2000 (Fig. 2).

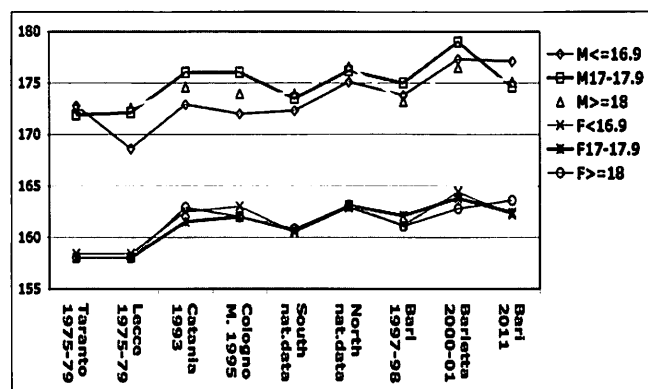


Fig. 2. Height increase in adolescents in the last three decades.

When compared to the data published by the WHO, the BMI of Bari Middle School students ranges between the 85th and the 95th percentiles, remaining above the mean average – between the 50th and the 85th percentiles – from 16 years onwards. Males reach the highest values at 14 years, females at 13.

Discussion

From these initial results - given the low number of subjects tested - we limit ourselves to make some suggestions, useful to the future development of this research.

Comparing these data with those collected between 1997 and 2000, we observe an earlier growth spurt in MS males, who show an increase in body height, not evident in females. When High School students are concerned, the boys of the Scientific show an increase in height at lower

ages, but then they place themselves between the CHS and the PI male values.

The influence of family environment can be perceived in the successive age groups, when both male and female students of Barletta CHS show the advantages of a favorable cultural background, combined with better nutritional habits and an established sport activity. This research points out the urgency of promoting the importance of a correct nutrition and of an active life in the schools to prevent pathologies which could arise later in life, following a tendency to overweight in youth. By the end of our research, our subjects were quite interested in our observations, especially concerning their being overweight. They were embarrassed in front of their schoolmates to appear “fat” and laughable, criticized or not accepted by the group. Therefore we believe that there are multiple reasons to continue this study which addresses both health and psychological needs of the local youth population.

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