

Physical Development and Social Status in University Students in 1980s

R. Stoev, L. Yordanova

*Institute of Experimental Morphology, Pathology and Anthropology with Museum,
Bulgarian Academy of Sciences, Sofia*

The purpose of this paper is to light the connections between social conditions and physical development in young adults. Data, collected in 1986 from university students in Sofia are analyzed. Although the university students are not random sample of all Bulgarian society and social differentiation in them will be rather smoothed, the analysis discovers significant social differentiation in the physical development of these students, including differences in age at menarche, height, body mass index, somatotype.

Key words: University students, age at menarche, height, body mass index, somatotype.

Introduction

The social differentiation in the physical development of young adults has established itself as a measure of the social welfare and social inequalities in the last decades [1, 2, 4, 5, 6].

The purpose of this paper is to study the social differentiation in the physical development of young adults at the end of the so called socialist period in the history of Bulgaria, in 1980s.

Materials and Methods

The individual data of 295 male and 572 female university students, investigated in 1986 in Sofia are analyzed in this study.

Their basic social characteristics were valued as follows:

1. a) Education of the parents: 1 – elementary; 2 – basic; 3 – secondary; 3,5 – college; 4 – university; 5 – scientific degree.
2. b) Birthplace and residence: 1 – village, 2 – small town (up to 25 thousands), 3 – medium town (25-100 thousands); 4 – city; 5 – Sofia.
3. c) Number of the siblings (brothers or sisters of the student).

A generalized index of social status (GISS) has been calculated by the formula:

$$\text{GISS} = \frac{\text{father's education} + \text{mother's education} + (\text{birthplace} + \text{residence})}{2} - \text{number of siblings}$$

If data of the education of one of the parents are missing (usually of the father), the value of the education of the other has been duplicated.

In practice GISS in the students varied between 4 and 12.

Then the basic anthropometric characteristics in both sexes and of age at menarche in female students were analyzed in connection with GISS.

Results and Discussion

The analysis shows strong correlations between social status and physical development, i.e. = significant social differentiation in the conditions for biological development and growth of the university students in this period.

Since the volume of this presentation is limited, the results are presented only by some graphs.

The social differences in mean age at menarche reach 0.75 year. Such differences in Europe in the 1980s were considered as very significant (**Fig. 1**).

The social differentiation of the stature is also significant, about one usual standard deviation (**Figs. 2, 3**). The connection between GISS and body mass index (BMI) is also clear, excluding the male students of highest social status (**Figs. 4, 5**).

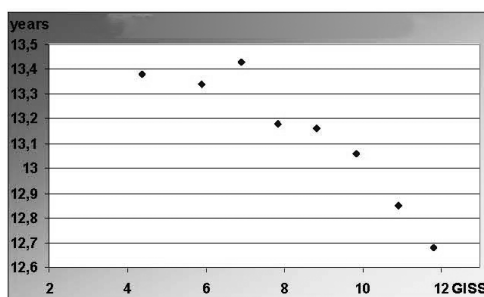


Fig. 1. GISS and mean age at menarche

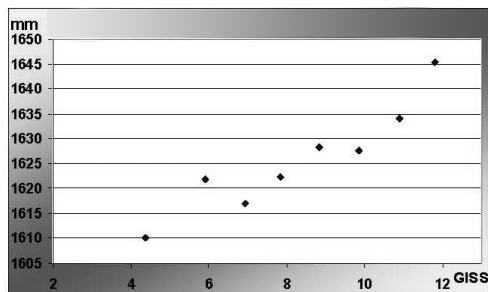


Fig. 2. GISS and mean height – female students

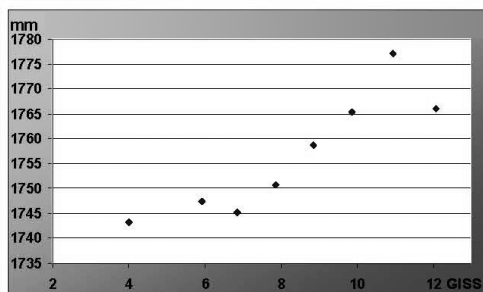


Fig. 3. GISS and mean height – male students

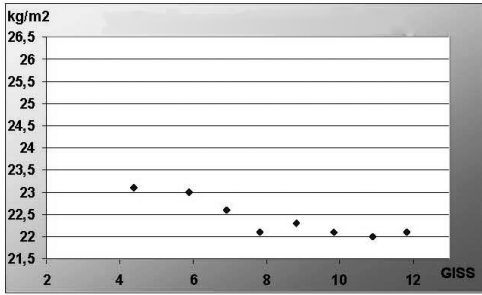


Fig. 4. GISS and BMI – female students

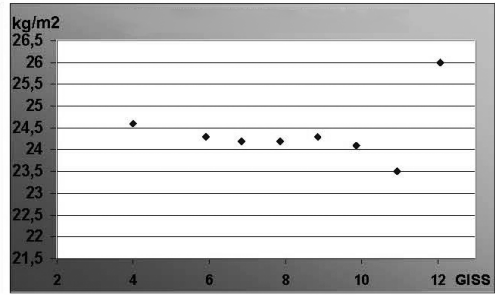


Fig. 5. GISS and BMI – male students

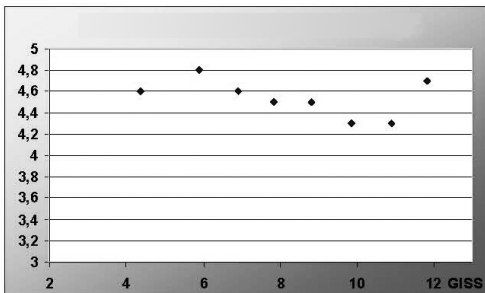


Fig. 6. GISS and endomorphy – female students

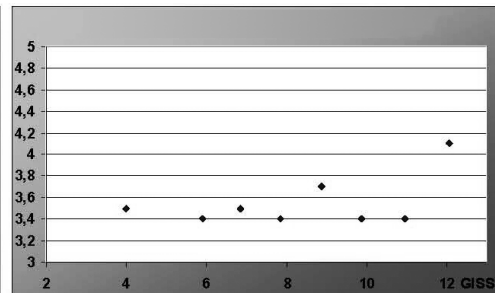


Fig. 7. GISS and endomorphy – male students

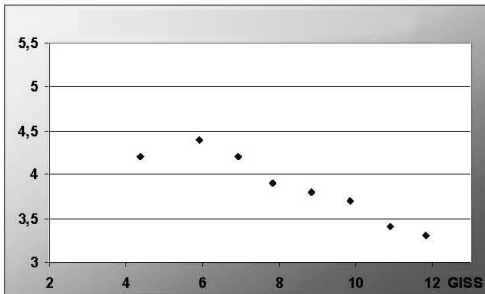


Fig. 8. GISS and mesomorphy – female students

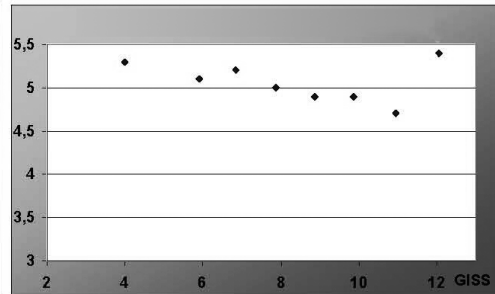


Fig. 9. GISS and mesomorphy – male students

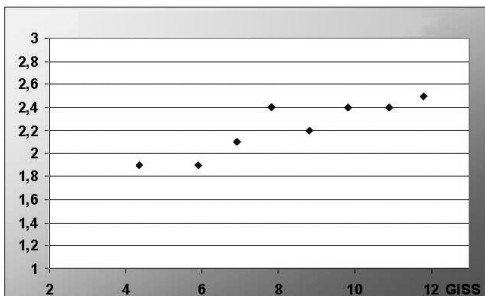


Fig. 10. GISS and ectomorphy – female students

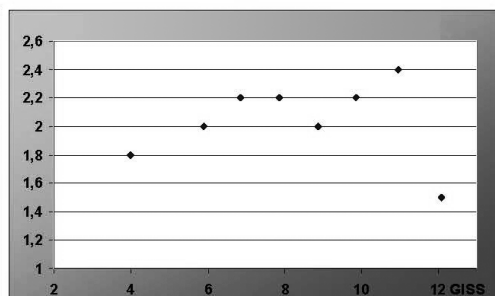


Fig. 11. GISS and ectomorphy – male students

Since BMI depends on the somatotype we shall be not surprised to find differences also in the somatotype components: endomorphy (**Figs. 6, 7**), mesomorphy (**Figs. 8, 9**), ectomorphy (**Figs. 10, 11**).

Both BMI and somatotype show that students of lower social status are more robust than these of higher social status. The same phenomenon was found in schoolchildren from the same period, 1984-1987 [3].

Since the university students are not random sample of all the Bulgarian society and social differentiation in them will be rather smoothed, and the analysis discovers significant social differentiation in their physical development, the social differentiation in the physical development of all Bulgarian youth in this period must have been very significant. So it was not a period of social equality and homogeneity as it was declared (and still is considered as such by some people).

Conclusion

In 1980s there are significant differences in the physical development of the university students in Sofia in dependence on the social environment. This fact indicates that the social environment was not homogenous and there were unfavorable conditions for children's and adolescents' growth and development in some social strata.

Since social differences have multiplied in the following 30 years (which is a well known fact), there is a pressing need similar investigations to be carried out on the influence of the social environment on the growth and development of the contemporary children and adolescents.

References

1. **Baten, J., M. Blum.** Growing taller, but unequal: Biological well-being in world regions and its determinants, 1810-1989. – *Economic History of Developing Regions*, **27**, 2012, 66-85.
2. **Komlos, J. D.** History of Human Height from the 17th to the 21st Century. – Paper presented on the Vth International Anthropological Congress of Ales Hrdlicka, Praha-Humpolec, 2009.
3. **Stoiev, R.** Somatotype in adolescents from a big city and a smaller town. – *Papers on anthropology (Tartu, Estonia)*, XIV, 2005, 344-352.
4. **Tanner, J. M.** Growth as a mirror of conditions in society. – In: Lindgren, G. (Ed.). *Growth as a mirror of conditions in society*. Stockholm Inst. Education Press, Stockholm, 1990, 9-70.
5. **Година, Е. З.** Аукусология человека – наука XXI века: проблемы и перспективы. – В: *Антропология на пороге III тысячелетия* (Ред. Т. И. Алексеева, Е. В. Балановская, Е. З. Година, Н. А. Дубова). **2**, М. Российское отделение ЕАА, 2003, 529-566.
6. **Миронов, Б. Н.** Благополучие населения и революции в имперской России: XVIII – начало XX века. Москва, Новый хронограф, 2010, 1-911.