

SOME ASSOCIATIONS OF BODY IMAGE WITH SELF-ESTEEM AND DEPRESSIVE MOOD IN HUNGARIAN YOUNG PEOPLE

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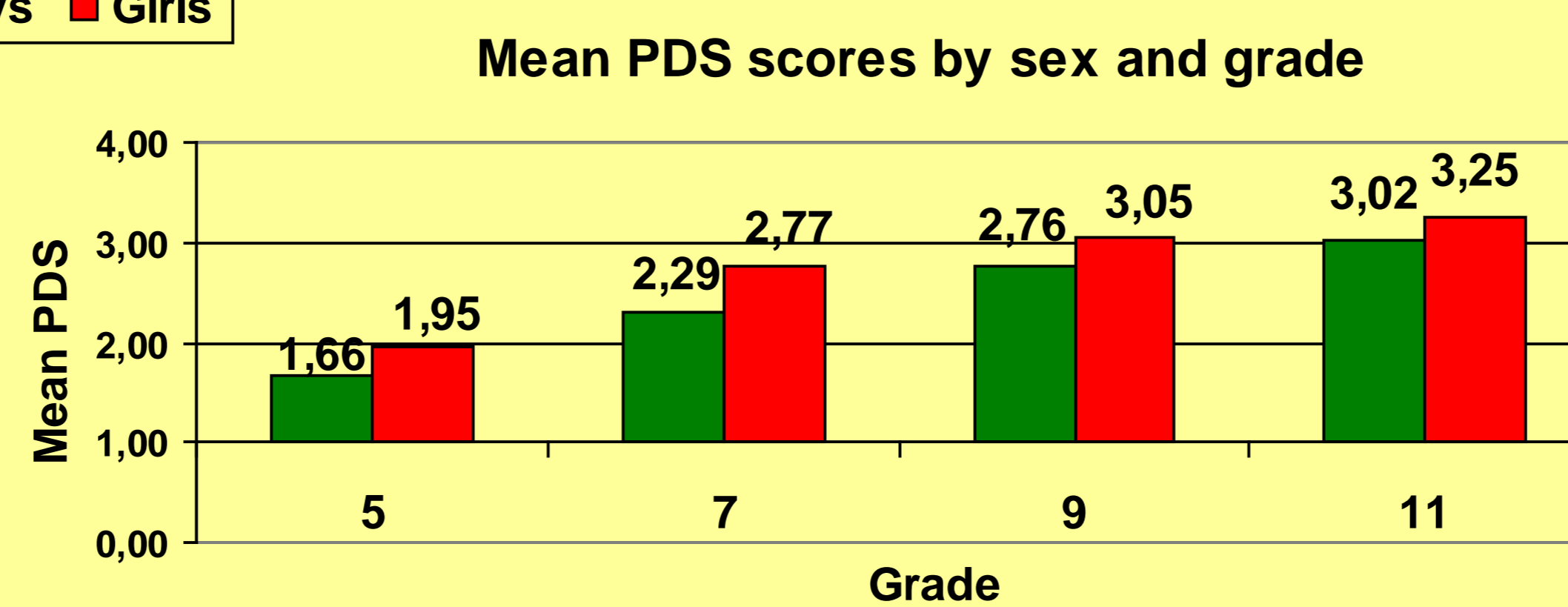
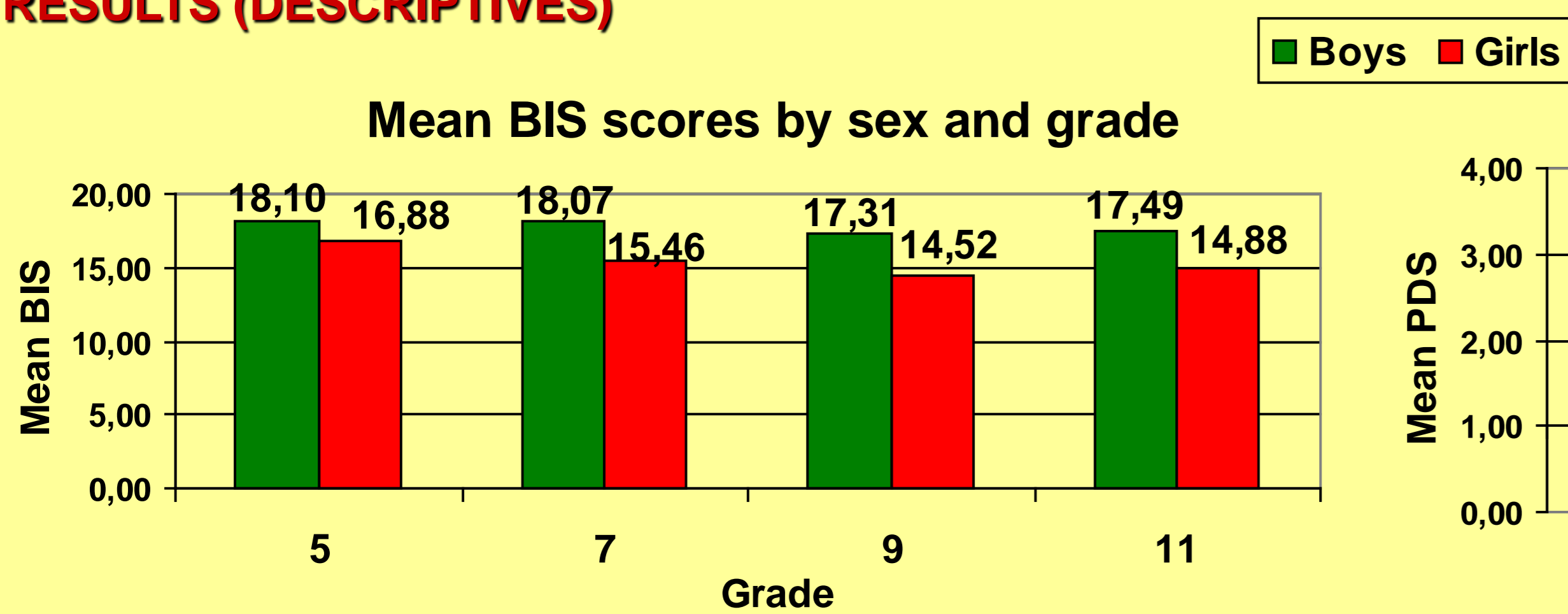
INTRODUCTION

- Biological and psychological development taking place during adolescence may interact in several complicated way. These spectacular and significant changes often impel young people to inspect themselves intensively. Their image on their own body as well as their attitude towards this image may influence their self-esteem and mental health (e.g. Siegel et al. 1999, Ge et al. 2001, LeResche et al, 2005).
- Social relations, especially peer relations and peer acceptance are highly important for adolescents. Thus they frequently judge their own somatic changes comparing to others' body and body changes. Deviance from the „normal”, the „average” may frustrate them, which may cause problems in communication and social behaviour.
- The aim of this analysis was to reveal relationships between body image and self-esteem, social self-esteem as well as depressive mood examining also how these relations are influenced by sex, age and pubertal development among Hungarian young people.

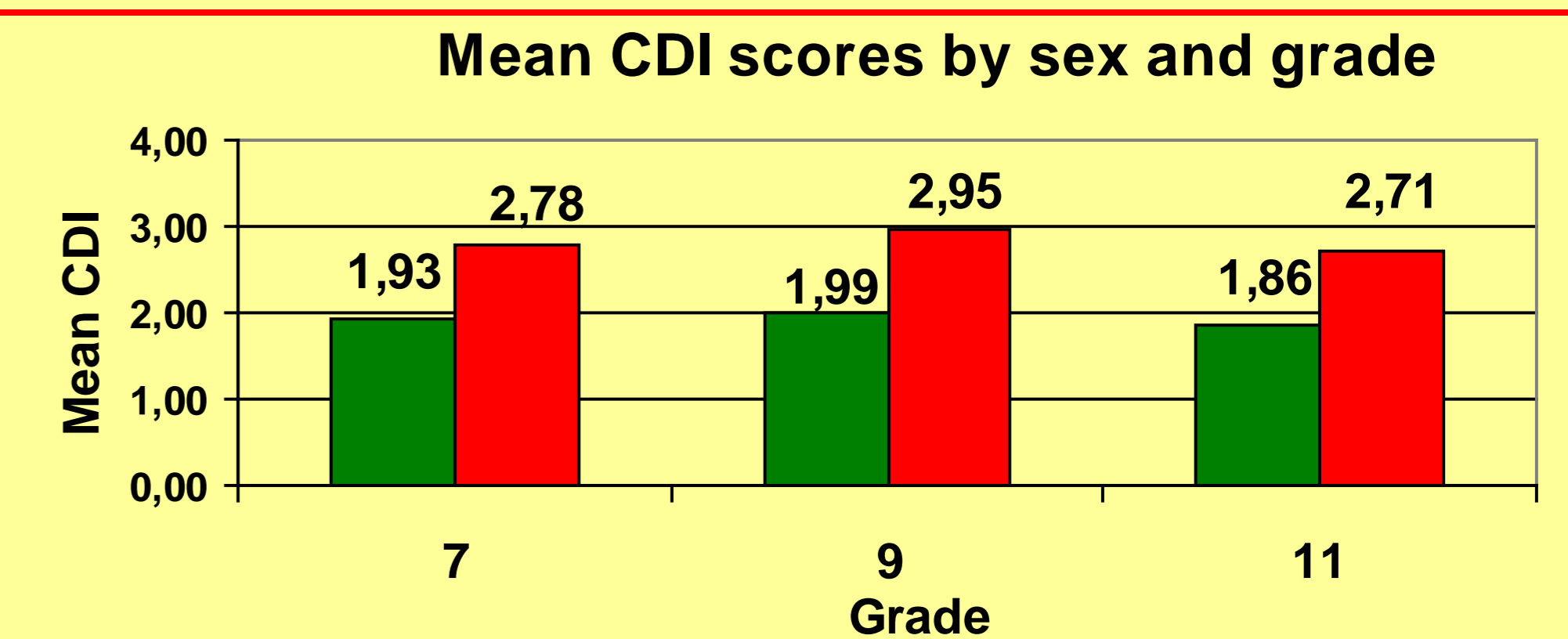
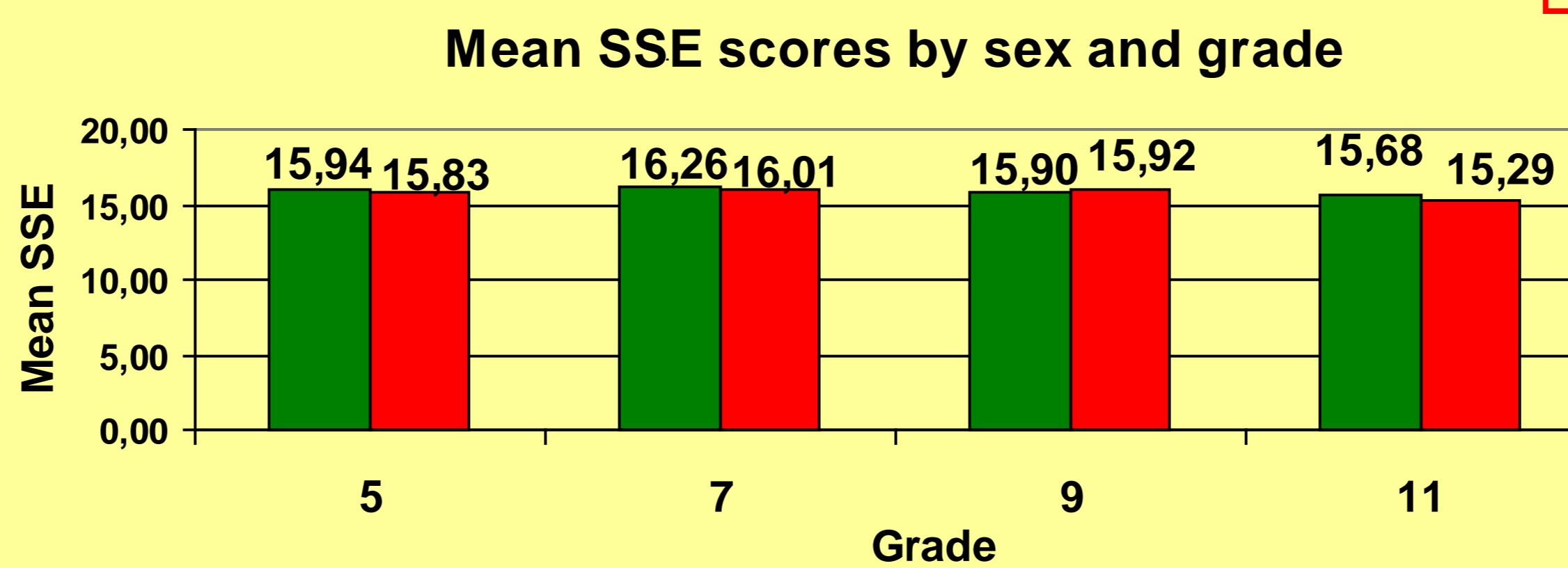
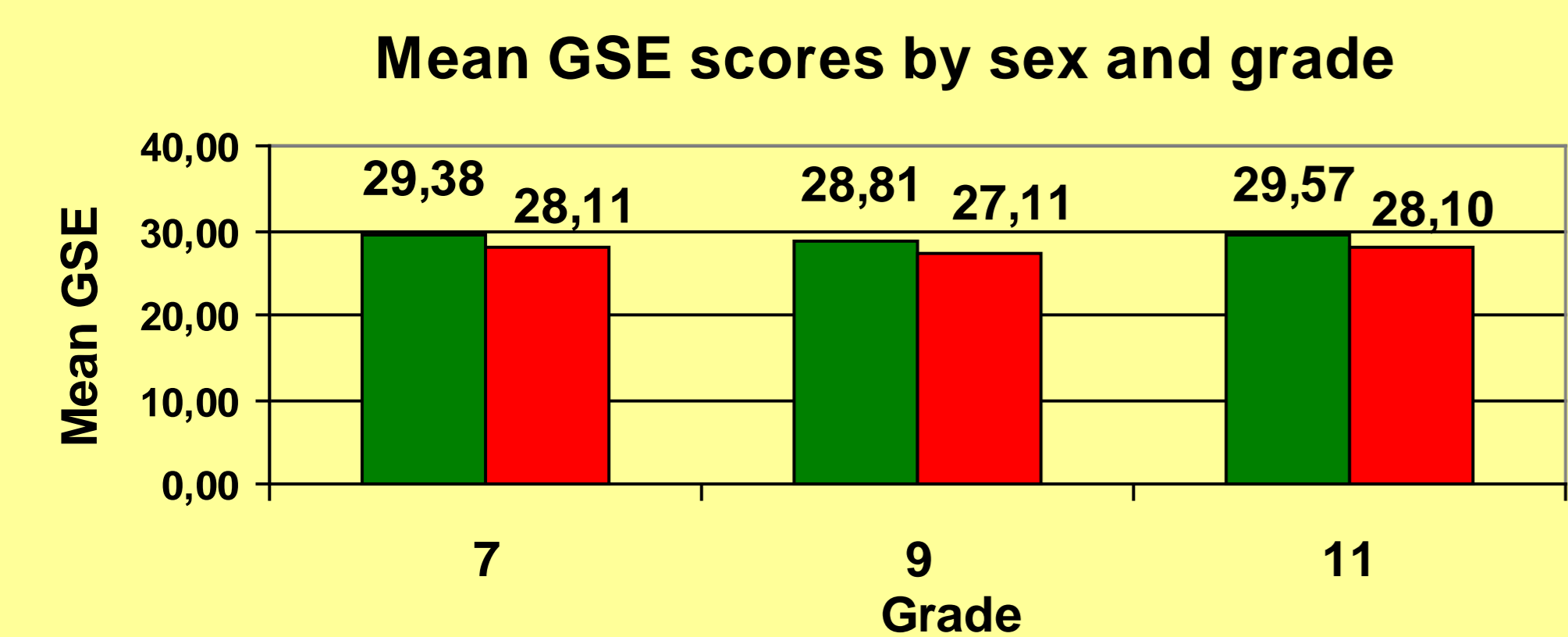
MATERIAL AND METHODS

- HBSC 2005/06 survey: representative sample from Hungary:** 5450 11-17-year-old students (Boys: N=2815, Girls: N=2635)
- Anonymous self-administered questionnaire**
- Independent variables:**
 - Body Image Subscale (BIS, from Body Investment Scale, Orbach and Mikulincer, 1998) 6 items, scale-range: 0-24, Cronbach- α : 0.81, higher score indicates a better body image
 - control var.: gender, grade (grade 5: mean age (MA) = 11.66, grade 7: MA=13.65, grade 9: MA=15.71, grade 11: MA=17.59).
 - control var.: Pubertal Developmental Scale (PDS, Petersen et al, 1988) 5 items, scale-range: 1-4, Cronbach- α : 0.77, higher score indicates more matured sexually
- Output variables:**
 - Global Self-esteem (GSE, Rosenberg, 1965), 5 grade students were not asked 10 items, scale-range: 10-40, Cronbach- α : 0.83, higher score indicates better self-esteem
 - Social Self-esteem (SSE, Harter, 1988) 5 items, scale-range: 5-20, Cronbach- α : 0.66, higher score indicates better self-esteem
 - Children's Depression Inventory, shortened version (CDI, Kovacs, 1985, Rózsa et al, 1999), 5 grade students were not asked, eight items, scale-range: 0-16, Cronbach- α : 0.77, higher score indicates more disturbed mood (cut-off point: 4+: high risk for depression)
- Statistical analysis:** descriptives, t-tests for independent samples, one-way ANOVA-s, linear and logistic regression models.

RESULTS (DESCRIPTIVES)



- Boys' mean scores are significantly higher than those of girls in the case of body image (BIS) and global self-esteem (GSE) in all grades, and in the case of SSE in grade 11
- Girls' mean scores are significantly higher than those of boys in the case of pubertal development (PDS) and depressive mood (CDI) in all grades
- There is a gradual and significant increase from grade 5 to 11 in pubertal development (PDS), except between 9 and 11 grade girls
- There is a significant decrease in body image (BIS) between grade 7 and 9 in boys and from grade 5 to 9 in girls
- The significantly lowest global self-esteem (GSE) scores belong 9 grade students in both genders
- The significantly lowest social self-esteem (SSE) scores belong 11 grade students in both genders



RESULTS Linear and logistic regression models describing relationships between body image and output variables (separate models for all interactions between body image and control variables)

Independent variable	Global self-esteem (GSE)						Social self-esteem (SSE)						Depression (CDI)						
	BIS-sex interaction			BIS-PDS interaction			BIS-sex interaction			BIS-grade interaction			BIS-PDS interaction			BIS-sex interaction		BIS-PDS interaction	
	B	95% CI	Stand. β	B	95% CI	Stand. β	B	95% CI	Stand. β	B	95% CI	Stand. β	B	95% CI	Stand. β	OR	95% CI	OR	95% CI
BIS	0.667	0.621-0.713	0.650***	0.604	0.575-0.633	0.589***	0.196	0.170-0.221	0.338***	0.218	0.183-0.253	0.377***	0.165	0.148-0.181	0.285***	0.767***	0.737-0.792	0.789***	0.772-0.807
Dummy_girl	0.051	-0.240-0.342	0.005	0.014	-0.276-0.305	0.001	0.049	-0.114-0.212	0.009	0.013	-0.150-0.176	0.002	0.022	-0.140-0.185	0.004	1.300*	1.057-1.097	1.191	0.978-1.450
Dummy_7	-	-	-	-	-	-	-0.070	-0.321-0.181	-0.011	-0.014	-0.267-0.239	-0.002	-0.035	-0.287-0.216	-0.005	-	-	-	-
Dummy_9	-0.344	-0.688-0.001	-0.034	-0.344	-0.688-0.000	-0.034	-0.281	-0.559-0.003	-0.046*	-0.258	-0.537-0.021	-0.043	-0.256	-0.534-0.023	-0.042	1.064	0.833-1.358	1.053	0.822-1.348
Dummy_11	0.262	-0.113-0.637	0.025	0.253	-0.122-0.628	0.024	-0.922	-1.227-0.617	-0.148***	-0.887	1.193-0.581	-0.142***	-0.903	-1.208-0.597	-0.145***	0.916	0.701-1.197	0.915	0.700-1.198
PDS	0.399	0.104-0.694	0.043**	0.439	0.143-0.735	0.048**	0.482	0.321-0.642	0.122***	0.505	0.344-0.666	0.128***	0.504	0.343-0.665	0.128***	0.986	0.801-1.213	1.087	0.876-1.350
BIS X sex	-0.108	-0.167-0.050	-0.080***	-	-	-	-0.056	-0.089-0.023	-0.073**	-	-	-	-	-	-	1.065**	1.019-1.114	-	-
BIS X grade 7	-	-	-	-	-	-	-	-	-	-0.051	-0.099-0.003	-0.043*	-	-	-	-	-	-	-
BIS X grade 9	-	-	-	-	-	-	-	-	-	-0.091	-0.136-0.045	-0.086***	-	-	-	-	-	-	-
BIS X grade 11	-	-	-	-	-	-	-	-	-	-0.064	-0.112-0.017	-0.055**	-	-	-	-	-	-	-
BIS X PDS	-	-	-	-0.077	-0.129-0.024	-0.039**	-	-	-	-	-	-	-0.038	-0.061-0.014	-0.045**	-	-	1.074**	1.029-1.121

- Only models with significant interaction variables are presented
- Reference categories of ordinal control variables: sex: boys grade: 5
- Reference category of output variable (depression, CDI) in logistic regression models: no risk for depression
- Where significant interaction was found between BIS and gender or sex, parallel models were built in all categories of these control variables in order to see clearly the effect of interaction
- ***: $p < 0.001$, **: $p < 0.01$, *: $p < 0.05$

RESULTS

Parameters of BIS in regression models built for boys and girls separately

Sex	Global self-esteem			Social self-esteem			Depression	
	B	95% CI	Stand. β	B	95% CI	Stand. β	OR	95% CI
Boys	0.669	0.629-0.715	0.561***	0.195	0.169-0.220	0.296***	0.761***	0.733-0.789
Girls	0.558	0.521-0.594	0.579***	0.142	0.120-0.163	0.256***	0.815***	0.794-0.836

* There were no significant BIS X grade interaction in the cases of global self-esteem and depression.

Parameters of BIS in regression models built for grades separately*

Grade	Social self-esteem		
	B	95% CI	Stand. β
5	0.217	0.181-0.254	0.349***
7	0.167	0.134-0.199	0.301***
9	0.134	0.104-0.164	0.243***
11	0.152	0.118-0.186	0.250***

RESULTS

- BIS** is the strongest predictor in all models: it has a significant positive relationship with GSE and SSE, and negative one with CDI.
- Sex** was significant only in CDI models: girls have about one-third higher odds to belong to the risky group.
- Grade** was significant only in SSE models: in grade 9 and 11 (secondary school) students have significantly lower SSE compared to 5 grade students.
- PDS** is significant predictor in models GSE and SSE, with the second strongest effect on the output variables. The relationship is positive in the case of both GSE and SSE.
- BIS X sex interaction** was significant in all models: an increase in BIS is associated with less self-esteem for girls compared to boys in the case of GSE and SSE, while the increase in BIS less reduces the odds to belong to the risky group in case of CDI in girls compared to boys. Regarding the strength of effects (i.e. stand. betas), no significant difference has been found between the two sexes, for any of the dependent variables.
- BIS X grade interaction** was negatively significant in SSE models, but was not significant in the other models. A positive changes in BIS is associated with the greatest increase in 5 grade students, and its effect decreases in the older groups, especially in grade 9.
- BIS X PDS interaction** was negatively significant in all models: when PDS score increases, the effect of BIS decreases (in case of CDI: when PDS increases, the increase in BIS is associated with a lower decrease in the odds of belonging to the risky group).

DISCUSSION

- As it is well-known from the literature (see the Introduction), body image proved to be a strong predictor in self-esteem and depression mood.
- In both self-esteem models sex was found to have no significant effect, while interaction effects between sex and body image have been revealed. It is also known that there are typical gender differences in self-esteem and subjective well-being indicators (see descriptive results). Thus, regarding gender differences in self-esteem and subjective well-being indicators (see descriptive results), one may suggest, that gender differences originated to a great extent from body image differences, as well as gender differences in the effect of body image. On the other hand in the case of depressive mood, sex has probably a highly significant role independently from body image.
- This analysis showed also that pubertal development and maturation status can influence considerably self-esteem and social self-esteem, and – in certain cases - it could be better predictor than age (represented in this analysis by grade).
- An interesting finding was the interaction effect between body image and pubertal development: among more developed young people the importance of body image is reduced in the subjective well-being.
- Associations revealed in this analysis can be useful in the understanding of young people's well-being and thus to develop more effective health education and health promotion practice.

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