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**Depression Scale
for Children and
Adolescents:
evaluation of
psychometric properties**

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Introduction

- One of the reasons for the selection of self-report method in the assessment of depressive symptoms is related with the growing recognition of children's and adolescent's unique position as observers of themselves and their social environment.
- **SDD is based on 3 concepts:**
 - ➔ three levels of depressive phenomena: symptoms, syndromes and disorders;
 - ➔ list of symptoms included in SDD meet the DSM-IV criteria for depressive disorders;
 - ➔ in the interpretation and understanding of the SDD results, developmental characteristics such as child's age and gender, as well as environmental influences, should be consider.



Method

Participants and procedure

- The research was conducted on **three samples**:
 - 1) the community sample of 2225 school children and adolescents (aged between 9 and 18 years);
 - 2) the clinical sample consisted of 137 patients (8-16 years) who were referred to the clinical child psychologists in the five hospitals in Croatia
 - 3) the community sample of 329 primary school children.

Measures

- **SDD** The Depression Scale for Children and Adolescents
- **CDI** Children's Depression Inventory
- **SEI** The Coopersmith Self-Esteem Inventory
- **HPLS** The Hopelessness Scale for Children
- **SKAD-62** The Fear and Anxiety Scale for Children and Adolescents
- Main psychometrics of the instruments used in this research are presented in **Table 1**.

Table 1. Main characteristics of the instruments used in this research

<i>Measures</i>	<i>No. of items</i>	<i>Range</i>	<i>Cronbach alfa</i>
SDD- The Depression Scale for Children and Adolescents	26	26-130	0,895
CDI – Children's Depression Inventory	27	0-54	0,71
SEI- The Coopersmith Self-Esteem Inventory	25	0-25	0,80
HPLS-The Hopelessness Scale for Children	17	0-17	0,97
SKAD-62 The Fear and Anxiety Scale for Children and Adolescents			
<i>Test anxiety</i>	11	11-55	0,868
<i>Social anxiety</i>	10	10-49	0,817
<i>Separation anxiety</i>	11	11-53	0,812
<i>Obsessive- compulsive symptoms</i>	8	8-40	0,674
<i>Anxiety sensitivity</i>	12	12-60	0,801
<i>Worry</i>	9	9-45	0,863

Results

Reliability

- The 26-item SDD had a Cronbach's alpha coefficient of **0.895**, indicating that internal consistency of the scale was good. The mean item-total correlation was **0.258**, ranging between **0.305** and **0.651**.

Factor structure

- Principal factor analyses with Varimax rotation were conducted on the 26-item SDD scale and yielded **two factors** with eigenvalues greater than 1, both accounted for 31.35% of the variance. The factors were: 1) **cognitive aspects of depression** (16 items) and 2) **emotional aspects of depression** (10 items). The factor solution showed good internal consistency, with coefficient α values of **0.88** for cognitive and **0.76** for emotional aspects of depression. The factor scores were relatively independent, with correlations among factors of 0.59.



Age and Gender Differences

- To examine age and gender differences in depression ratings univariate analysis of variance (ANOVA) was performed. The total SDD scores were significantly higher in secondary school females than in males. There were no gender differences in the SDD total scores in primary school children (**Figure 1.**)
- In the next step ANOVA was calculated separately for two factors- cognitive and emotional symptoms of depression. As can be seen in **Figure 2.** and **Figure 3.,** gender differences are obvious in emotional aspects of depression in all age groups (grades): girls scored significantly higher on the emotional aspects of SDD than boys.

Figure 1. Mean SDD total scores of males (N=966) and females (1259) in primary and secondary school

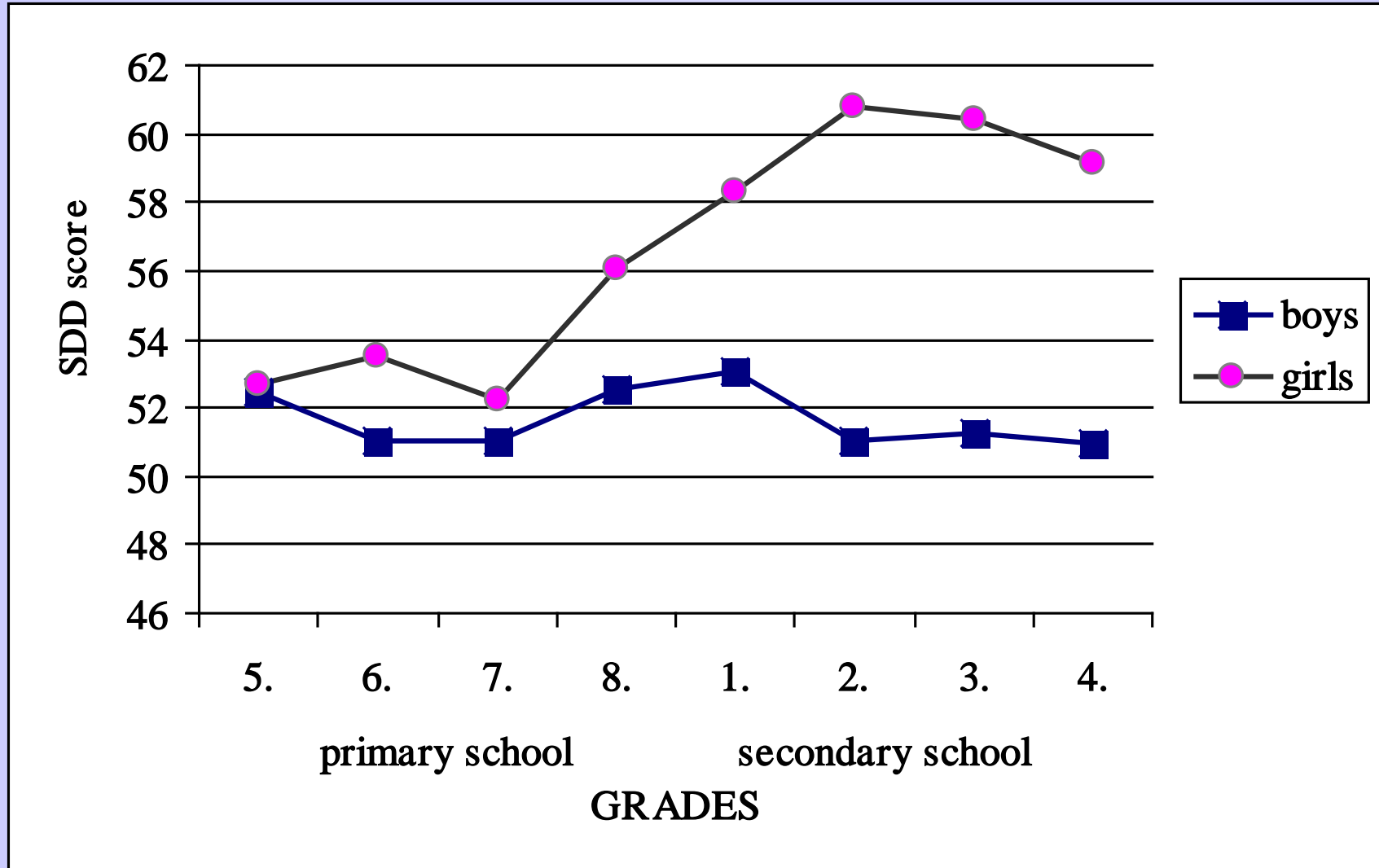


Figure 2. Mean SDD cognitive aspects scores of males (N=966) and females (1259) in primary and secondary school

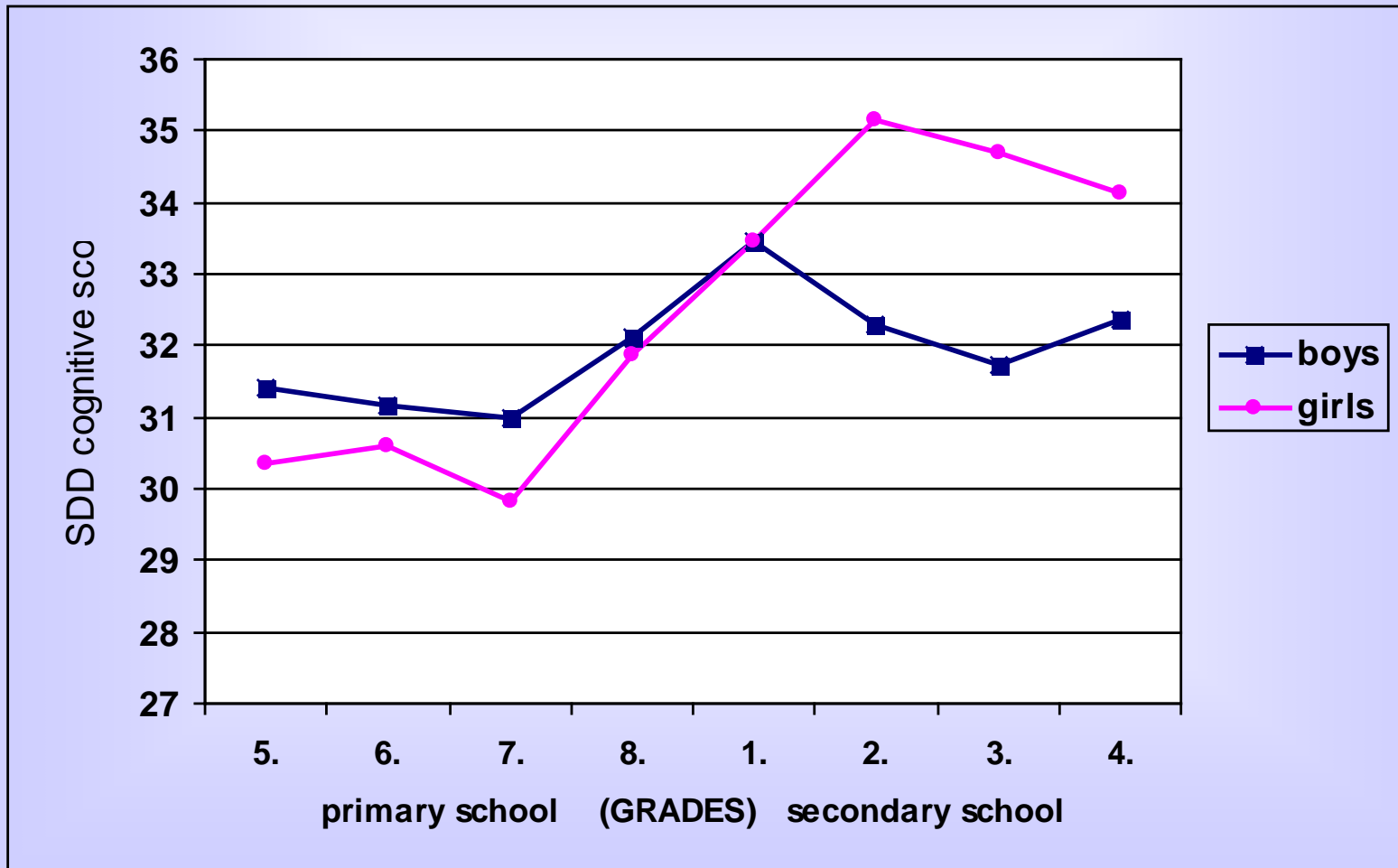
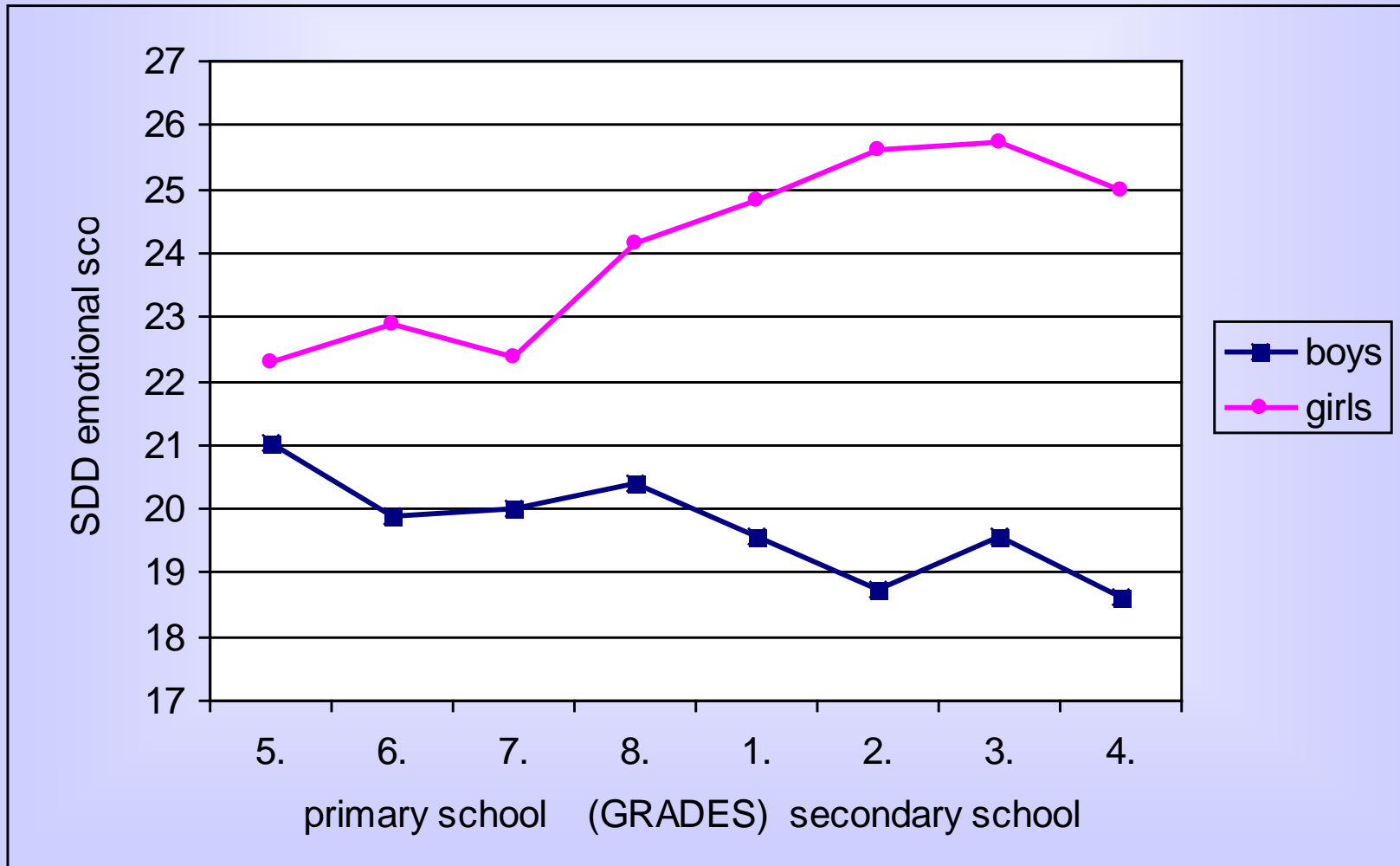


Figure 3. Mean SDD **emotional aspects** scores of males (N=966) and females (1259) in primary and secondary school



Discriminant Validity

- Comparison of the SDD total results is performed between 4 clinical samples - children with **depressive disorder** (N=19), with **anxiety disorders** (N=35), with **psychosomatic disorders** (N=52) and group of children with **other disorders** (N=30). ANOVA results indicated significant differences between groups- $F(3,132)=12.7$; $p=0.00$. (**Figure 4**).
- **Correlations between SDD and external criteria**, most popular depression scale – **Children's Depression Inventory** (CDI; Kovacs, 1981). SDD scores were significantly connected to CDI depression scores (**$r=0.55$**).
- correlations were calculated between SDD and measures of psychological constructs that are hypothesized to be related to depression: **hopelessness, self-esteem, anxiety**. (**Figure 5**). Correlations with all the measures showed the predicted pattern.

Figure 4. Mean SDD scores in clinical samples

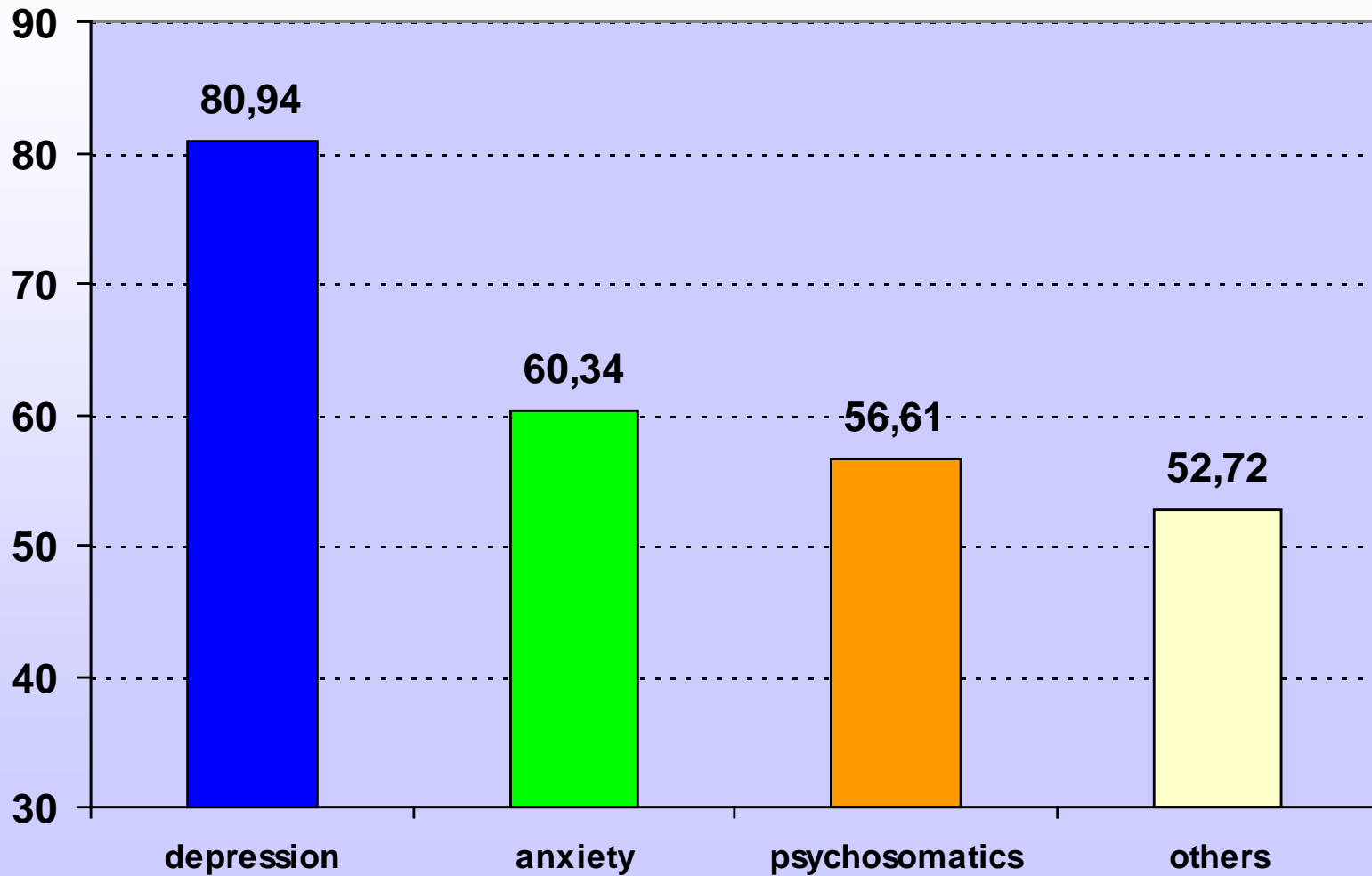
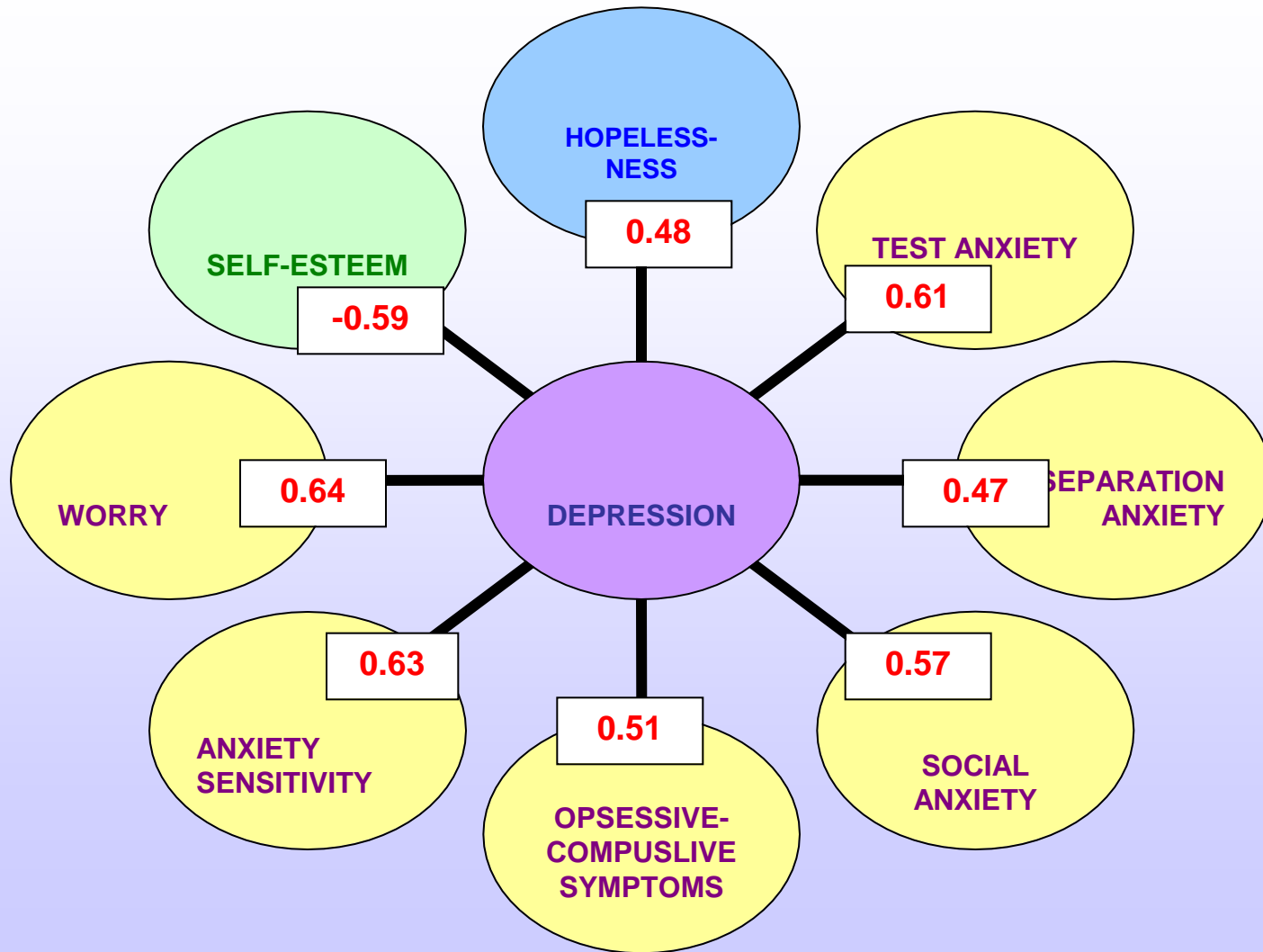


Figure 5. Correlations between SDD scores and measures related to depression



Conclusions

- **Factor analysis** yielded two factors (cognitive and emotional) that have been found in previous researches in this field. Furthermore, the **reliability** of the scale appeared to be good (internal consistency $\alpha=0.895$).
- Evident **gender differences** were found for the SDD, showing that secondary school girls generally report higher levels of depressive symptoms than boys. **Age** effect was found for girls only, with older girls displaying higher levels of depression symptoms than younger girls.
- The scale correlated in the theoretically meaningful way with measures of **hopelessness** and **low self-esteem**, as well as different aspects of **anxiety**. SDD also discriminated well between groups of children with depressive disorders and anxiety, psychosomatic and different disorders