

# The Child Behavior Checklist, Teacher Report Form and Youth Self Report Problem Scales in a Normative Sample of Croatian Children and Adolescents Aged 7–18

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## ABSTRACT

*The main goal of this study was to standardize the Child Behavior Checklist (CBCL), Teacher Report Form (TRF) and Youth Self Report (YSR) questionnaire problem scales on a normative random sample of children and adolescents (N=3309) aged 7 to 18 throughout Croatia. The second goal was to compare boys-girls problem scales data and CBCL-TRF-YSR differences in our sample. The mean value of CBCL scores for the Total Problems scale for different groups (children / adolescents; boys / girls) ranged from 17.07 to 20.71. Overall instruments' internal consistency ranged from 0.83 to 0.86. In almost all the scales parents reported higher scores than teachers ( $p < 0.01$ ). In all the scales adolescents reported significantly higher scores than their parents and teachers ( $p < 0.01$ ). This study standardized the questionnaires for our specific socio-cultural circle, which satisfy complex psychopathology study criteria. Problem scales results in our sample suggest similarity to previous European researches.*

**Key words:** standardization, CBCL, TRF, YSR, school age, Croatia

## Introduction

The assessment of possible emotional and behavioral children/adolescents problems is nowadays approached in a complex way. According to international experiences, children/youth seem to be exposed to greater pressures than they were several decades ago, which may have a possible greater influence on the increase of psychopathology<sup>1</sup>. In the Western countries the prevalence rates of behavioral and emotional problems among children/adolescents tend to vary, i.e. the range is between 6.2% and 41.3% with the average of 16.5%<sup>2-4</sup>. The character of psychopathology may be characterized in terms of comorbidity and nowadays gains in significance<sup>5</sup>. That is, different psychopathological syndromes do not necessarily rule each other out, but can overlap, i.e. internalizing and externalizing problems may co-exist<sup>6,7</sup>.

In child and adolescent psychiatry it is widely accepted that study of psychopathology is based on more

than one base. Empirical quantitative taxonomy is being used, as well as several sources of information, standardized type of assessment and diagnostics, which enables experts from various fields in a given culture to communicate, but also make possible the generalization of cross-cultural results; the possibility of finding assessment instruments that can assess a wide scope of psychopathology as well as the economic procedure that satisfies time/cost requirements<sup>8-12</sup>. Questionnaires developed by Thomas Achenbach (Child Behavior Checklist, CBCL; Teacher Report Form, TRF and Youth Self Report, YSR) comply with above mentioned psychopathology research criteria and are among the most used instruments in child and adolescent psychiatry<sup>13-15</sup>. Multi-informants provide the possibility to assess the child from various angles, which helps to create a unique picture of the particular child/adolescent and today cannot be ruled out during the assessment<sup>4,10-12,16-21</sup>. It

is widely accepted today that older children's and especially adolescents' statements are competent enough i.e. they sometimes give us certain information more quickly and more directly<sup>20,22,23</sup>. Further, useful information provided by parents are one of the most common information sources, same as teachers who can also give a unique picture of a particular child/adolescent<sup>24,25</sup>, as well as other informants. Among various informants there is only a moderate agreement<sup>17</sup>. Higher agreement is found among adult informants (e.g. father/mother, parent-teacher), than between child/adolescent and a parent or a teacher<sup>17,26–29</sup>. Higher agreement among informants is found for externalizing problems than for internalizing problems<sup>30,31</sup>, as well as for more easily observable symptoms (more visible than hidden)<sup>32,33</sup>.

Achenbach's questionnaires are based on statements of various informants and each of these questionnaires is open to influences of various variables: from biological and psychological to socio-cultural<sup>34,35</sup>. Some respective factors are language, customs, tradition, religion, nationality, social-economic status, culture in a narrow sense, politics, migration, assumed genetic differences, organization of mental health services, biological and psychological factors etc. The research of questionnaires in different cultures has led to different results, although certain similarities were observed<sup>34</sup>. Past research of psychopathology in different cultures thus suggest the need for the standardization of instruments in each particular culture.

In Croatia, the need for the assessment of possible child/adolescent psychopathology i.e. for the development of appropriate mental health protection has already been recognized for quite some time because the existing one seemed not appropriate enough<sup>36</sup>. So far, preliminary empirical research in Croatia gave us, the insight into possible emotional and behavioral problems in children and adolescents, as compared to the original American sample, but the above mentioned researches were not representative enough<sup>37–40</sup>. According to preliminary studies the children and adolescents in Croatia resemble the ones in European cultures and the ones in transitional cultures<sup>34,35,37,38,41–43</sup>.

The main purpose of this study was to standardize questionnaires CBCL, TRF, YSR problem scales on a large enough number of subjects aged 7 to 18, of children and adolescents in Croatia. The first goal of this study was to obtain comprehensive picture on CBCL, TRF and YSR problem-scales data for children and youths in Croatia, aged 7 to 18, and compare it to the original American sample. The second goal of this study was to compare boys-girls problem scales data and CBCL-TRF-YSR differences in our sample. According to data quoted in literature<sup>16,35,41,42</sup>, and also encouraged by our own clinical experience on substantial differences in emotional and behavioral problems according to age, our sample was divided into two categories: children (age 7 to 11) and adolescents (age 12 to 18).

## Subjects and Methods

### *Subjects and procedure*

The research was carried out on a total of 3309 children and adolescents aged 7 to 18. The research was done in the frame of the standardization of Achenbach's questionnaires project. It was carried out in the period from 2002 to 2005. In the course of gathering the subjects for the sample we divided Croatian territory into regions, in order to obtain an even representation throughout Croatia. Upon this, we randomly selected the towns in each region. Further, in each town a class was selected in each school pursuant to a certain age group. Sex of the examinees in each class was mostly even. Schools and classes were randomly chosen by a local education contact person or expert from the mental health field. Furthermore, parents of pupils from each so selected class were invited to complete the questionnaire. After the informed consent, parents were asked to complete at home the Croatian translation of the original CBCL questionnaire received in an envelope. Parents completed the questionnaires on a voluntary basis. The response rate was 98% among parents. Furthermore, the research was carried out in a way that teachers in the respective classes were asked to complete the TRF for the same pupils. Each teacher completed questionnaires for 20 to 30 examinees. Each teacher completed the questionnaires at home or at school during his free time and was awarded a small fee. Each teacher had a limit of completing only ten questionnaires daily. Teachers completed all the questionnaires. Further, the research was carried out in a way that adolescents were asked to fill in the YSR questionnaires. The response rate among adolescents was 96.5%. All the questionnaires were self-administered.

### *Formation and training of the research team*

Almost all chiefs of child and adolescent psychiatry departments from around Croatia helped us, together with their teams, in getting the data for the research. Several meetings with these teams were held, in order to ascertain the uniformity of the procedure.

### *The CBCL, TRF and YSR questionnaires*

Each questionnaire consists of two parts<sup>13–15</sup>. The first part contains a series of questions assessing adaptive behavior. The second part of the CBCL, TRF and YSR questionnaires contains items describing behavior, each of which is to be rated on a 3-point scale for applicability to a child/adolescent: 0=not true, 1=somewhat or sometimes true, 2=very true or often true. In this study the second part of each particular questionnaire was used, because of its larger significance in clinical work. These ratings were combined to form eight narrow band scales or syndromes, two broadband scales, and a Total Problems score. The eight syndromes are termed: Withdrawn; Somatic Complaints; Anxious/Depressed; Social Problems; Thought Problems; Attention Problems; Delinquent Behavior and Aggressive Behav-

ior. Broadband scales are termed: Internalizing and Externalizing. The Internalizing scale is made up of: Withdrawn, Somatic Complaints and Anxious/Depressed scales. The Internalizing scale reflects the internal stress. The Externalizing scale is made up of Aggressive Behavior and Delinquent Behavior scales. Externalizing scale reflects one's conflict with other people and their expectations.

The CBCL, TRF and YSR questionnaires were translated from English into Croatian by psychiatrists fluent in both languages. To ensure translation equivalents, the Croatian version was translated back into English independently by other psychiatrists. Conceptual and linguistic problems were resolved through extensive consultations with psychiatrists and linguists. In our preliminary studies the CBCL, TRF, and YSR showed high reliability<sup>37,38</sup>.

### Statistical analysis

Respondents were *a priori* divided in groups according to sex and age (up to and over 11 years old). The description was given, including 90<sup>th</sup> and 98<sup>th</sup> percentile values, for all 3 scales according to gender and age groups. The internal consistency of CBCL, TRF and YSR scales was checked by Cronbach's *alpha*. Parents, teachers and adolescents consistency concerning the problem scales was verified by Pearson's correlation coefficient. The comparison of behavioral/emotional syndromes raw scores of this study with those found by Achenbach (1991)<sup>13–15</sup> was performed by *t* test for the CBCL, TRF and YSR separately. The difference between boys and girls according to raw mean CBCL, TRF and YSR scores, i.e. difference between raw mean CBCL, TRF and YSR scores of boys and girls was tested by the Independent Sample *t* test, i.e. the Paired Sample *t* test. All statistical procedures were done with the help of the Statistical Package for Social Sciences (SPSS) for Windows Release 9.0.1.

## Results

### Demographic distribution

Our sample consisted of a total of 3309 subjects. Of all our examinees, 53.15% were girls. In the children's group (age 7 to 11) 50.8% were girls. In the adolescents' group (age 12 to 18) 55.2% were girls. Distribution of examinees according to Croatian geographical regions was as follows: Capital City of Zagreb – 28.6%, Central and North – 42.1%, Southern and Adriatic – 19.8%, and Eastern – 9.6%. Mothers' education was as follows: up to 8 years of schooling – 9.3%, 8 to 12 years – 62.2%, more than 12 years – 28.5%. Fathers' education was as follows: up to 8 years – 7.3%, 8 to 12 years – 62.3%, more than 12 years – 30.5%. CBCL questionnaires were completed by mothers (81.3%), fathers (15.3%), and by somebody else (3.4%).

### Mean values and cross-cultural comparisons

The CBCL mean values and standard deviations, according to age and gender, are shown in Table 1. Mean values for total CBCL problems for different groups (children/adolescents; boys/girls) range between 17.07 and 20.71. Cutoff scores that represent the 90<sup>th</sup> and 98<sup>th</sup> percentile, as well as the internal consistency of CBCL problem scales are shown in Table 2. Overall internal consistency for children aged 7 to 11 for CBCL was 0.84. Overall internal consistency for adolescents aged 12 to 18 for CBCL was 0.85.

The TRF mean values and standard deviations, according to age and gender, are shown in Table 3. Mean values for total TRF problems for different groups (children/adolescents; boys/girls) range between 9.49 and 18.11. Cutoff scores that represent the 90<sup>th</sup> and 98<sup>th</sup> percentile, as well as the internal consistency of TRF problem scales are shown in Table 4. Overall internal consistency for children aged 7 to 11 for TRF was 0.84. Overall

TABLE 1  
MEAN SCORES AND STANDARD DEVIATIONS OF THE CBCL BEHAVIOR PROBLEM SCALES BY AGE GROUPS AND SEX

Scale	Age 7–11 years				Age 12–18 years			
	Girls (N=706)		Boys (N=678)		Girls (N=790)		Boys (N=578)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Withdrawn	0.99	1.62	1.12	1.68	1.73	2.08	1.73	2.20
Somatic Complaints	1.13	1.65	0.95	1.42	1.82	2.26	1.31	1.83
Anxious/Depressed	2.61	2.87	2.88	2.94	3.42	3.67	3.04	3.36
Social problems	1.82	2.01	2.13	2.04	1.36	1.76	1.69	1.97
Thought Problems	0.30	0.82	0.37	0.81	0.43	0.96	0.51	1.11
Attention Problems	2.42	2.69	3.60	3.27	2.58	2.84	3.46	3.30
Delinquent Behavior	0.93	1.31	1.46	1.66	1.16	1.72	1.69	2.16
Aggressive Behavior	4.89	4.49	6.07	4.94	4.58	4.27	5.42	5.22
Internalizing	4.66	4.85	4.85	4.73	6.81	6.44	5.95	6.06
Externalizing	5.82	5.48	7.53	6.19	5.75	5.46	7.11	6.83
Total Problems	17.07	14.24	20.67	15.19	19.10	15.96	20.71	17.48

**TABLE 2**  
CUTOFF SCORES REPRESENTING THE 90TH AND 98TH PERCENTILES AND INTERNAL CONSISTENCY OF CBCL PROBLEM SCALES

Scale	Age 7–11 years					Age 12–18 years				
	Girls (N=706)		Boys (N=678)		$\alpha^a$	Girls (N=790)		Boys (N=578)		$\alpha$
	90	98	90	98		90	98	90	98	
Withdrawn	3	6	3	6	0.84	5	8	5	8	0.85
Somatic Complaints	3	7	3	6	0.84	5	8	4	7	0.85
Anxious/Depressed	7	11	7	11	0.83	8	14	8	13	0.83
Social problems	5	7	5	8	0.83	4	7	4	7	0.85
Thought Problems	1	3	1	3	0.85	2	3	2	4	0.85
Attention Problems	6	9	8	12	0.82	7	10	8	12	0.84
Delinquent Behavior	3	5	4	6	0.84	3	6	5	7	0.85
Aggressive Behavior	11	17	13	19	0.81	10	16	13	20	0.82
Internalizing	12	18	12	19	0.81	16	25	14	24	0.81
Externalizing	13	21	16	24	0.80	13	20	17	26	0.81
Total Problems	37	56	44	59	0.88	41	59	44	70	0.89

<sup>a</sup> Cronbach  $\alpha$  if item deleted

**TABLE 3**  
MEAN SCORES AND STANDARD DEVIATIONS OF THE TRF BEHAVIOR PROBLEM SCALES BY AGE GROUPS AND SEX

Scale	Age 7–11 years				Age 12–18 years			
	Girls (N=642)		Boys (N=630)		Girls (N=861)		Boys (N=693)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Withdrawn	1.03	1.96	1.20	2.17	1.67	2.51	1.44	2.27
Somatic Complaints	0.46	1.27	0.47	1.23	0.70	1.62	0.46	1.15
Anxious/Depressed	2.02	2.96	2.41	3.30	3.07	3.75	2.71	3.51
Social problems	1.01	2.10	1.70	2.75	1.35	2.36	1.68	2.54
Thought Problems	0.13	0.53	0.28	0.84	0.15	0.63	0.21	0.80
Attention Problems	2.90	5.05	6.38	8.13	3.55	4.94	5.93	7.31
Delinquent Behavior	0.26	0.82	0.95	1.75	0.66	1.57	1.34	2.48
Aggressive Behavior	1.77	3.83	4.68	6.87	2.31	4.18	4.44	7.16
Internalizing	3.43	4.65	3.97	5.37	5.30	6.10	4.49	5.47
Externalizing	2.04	4.42	5.63	8.23	2.98	5.33	5.78	9.05
Total Problems	9.49	13.01	18.11	21.29	13.17	15.40	18.10	20.90

**TABLE 4**  
CUT-OFF SCORES REPRESENTING THE 90TH AND 98TH PERCENTILES AND INTERNAL CONSISTENCY OF TRF PROBLEM SCALES

Scale	Age 7–11 years					Age 12–18 years				
	Girls (N=642)		Boys (N=630)		$\alpha^a$	Girls (N=861)		Boys (N=693)		$\alpha$
	90	98	90	98		90	98	90	98	
Withdrawn	4	8	4	9	0.83	5	10	5	8	0.84
Somatic Complaints	2	4	2	5	0.84	3	6	2	4	0.84
Anxious/Depressed	6	11	7	12	0.82	8	14	8	13	0.83
Social problems	3	9	5	11	0.82	4	9	5	9	0.83
Thought Problems	0	2	1	3	0.84	0	3	0	3	0.84
Attention Problems	10	19	17	29	0.79	10	18	17	29	0.80
Delinquent Behavior	1	3	3	7	0.83	2	6	4	10	0.83
Aggressive Behavior	6	16	14	27	0.80	7	17	14	30	0.80
Internalizing	10	18	11	21	0.81	13	24	12	19	0.82
Externalizing	7	18	17	31	0.79	9	22	18	39	0.80
Total Problems	28	51	48	81	0.86	32	60	46	85	0.86

<sup>a</sup> Cronbach  $\alpha$  if item deleted

**TABLE 5**  
MEAN SCORES AND STANDARD DEVIATIONS OF THE YSR  
BEHAVIOR PROBLEM SCALES BY SEX

Scale	Age 12–18 years			
	Girls (N=590)		Boys (N=408)	
	Mean	SD	Mean	SD
Withdrawn	3.84	2.33	3.07	2.44
Somatic Complaints	3.39	2.92	2.23	2.52
Anxious/Depressed	6.72	4.76	4.72	4.26
Social problems	2.66	2.10	2.69	2.31
Thought Problems	1.64	2.11	1.75	2.44
Attention Problems	5.11	2.95	4.82	3.08
Delinquent Behavior	2.72	2.64	3.49	3.18
Aggressive Behavior	8.58	4.84	7.77	5.33
Internalizing	13.53	8.06	9.79	7.71
Externalizing	11.30	6.71	11.26	7.52
Total Problems	34.25	17.78	30.31	19.11

internal consistency for adolescents aged 12 to 18 for TRF was 0.84.

The YSR mean values and standard deviations, according to age and gender, are shown in Table 5, and their total problem values were 34.25 and 30.31. Cutoff scores that represent the 90<sup>th</sup> and 98<sup>th</sup> percentile, as well as the internal consistency of YSR problem scales are shown in Table 6. Overall internal consistency for YSR was 0.86.

Comparison of the CBCL, TRF and YSR raw scores with Achenbach’s original American sample is shown in Table 7. In both parents’ and teachers’ reports, the majority of scales showed that the American sample revealed bigger problems. In adolescent’s reports, the American

**TABLE 6**  
CUTOFF SCORES REPRESENTING THE 90TH AND 98TH  
PERCENTILES AND INTERNAL CONSISTENCY OF YSR  
PROBLEM SCALES

Scale	Age 12–18 years				
	Girls (N=590)		Boys (N=408)		$\alpha$
	90	98	90	98	
Withdrawn	7	9	6	10	0.86
Somatic Complaints	7	11	6	10	0.86
Anxious/Depressed	13	19	10	17	0.84
Social problems	6	8	6	8	0.86
Thought Problems	4	8	5	9	0.86
Attention Problems	9	11	9	12	0.85
Delinquent Behavior	6	10	8	13	0.86
Aggressive Behavior	15	21	16	22	0.84
Internalizing	24	33	20	32	0.83
Externalizing	21	27	21	32	0.83
Total Problems	57	75	56	85	0.89

sample showed higher scores in Thought Problems and Total Problems scales in girls while there is a reverse situation in Somatic Complaints, Attention Problems, Aggressive Behavior and Externalizing scales. In adolescents, American adolescents scored higher in Withdrawn, Thought Problems, Aggressive Behavior and Total Problems scales.

*Boys-girls and CBCL-TRF-YSR differences*

Raw mean values comparisons for CBCL and TRF for children aged 7 to 11 are shown in Table 8. Concerning boys/girls differences, the teachers’ and parents’ reports generally showed higher scores in boys. Namely,

**TABLE 7**  
COMPARISON OF THE RAW MEAN CBCL, TRF AND YSR SCORES OF THE PRESENT STUDY WITH ACHENBACH’S (1991) SAMPLE BY  
MEANS OF STUDENT t-TEST

Scale	CBCL				TRF				YSR	
	7–11 years		12–18 years		7–11 years		12–18 years		12–18 years	
	Girls (706/488) <sup>a</sup>	Boys (678/458)	Girls (790/604)	Boys (578/564)	Girls (642/379)	Boys (630/334)	Girls (861/369)	Boys (693/309)	Girls (590/678)	Boys (408/637)
Withdrawn	P<A***	P<A***	P<A***	P<A***	P<A***	P<A***		P<A***		P<A*
Somatic Complaints			P>A***	P<A**	P<A***		P<A**		P>A**	
Anxious/Depressed	P<A***				P<A***	P<A***				
Social problems			P<A***		P<A***					
Thought Problems		P<A*	P<A**		P<A***		P<A***	P<A**	P<A***	P<A***
Attention Problems					P<A***	P<A***	P<A***	P<A***	P>A***	
Delinquent Behavior	P<A***		P>A*		P<A***	P<A***	P<A***			
Aggressive Behavior	P<A***	P<A**	P<A***	P<A***	P<A***	P<A**	P<A**	P<A*	P>A*	P<A*
Internalizing	P<A***	P<A***	P<A*		P<A***	P<A***				
Externalizing	P<A***	P<A***	P<A***	P<A***	P<A***	P<A**	P<A**	P<A*	P>A**	
Total Problems	P<A***	P<A***	P<A***		P<A***	P<A***	P<A*	P<A***	P<A***	P<A***

<sup>a</sup> number of cases present study/Achenbach’s sample, \* p<0.01, \*\* p<0.01; \*\*\* p<0.001, P = Present study, A = Achenbach’s sample

**TABLE 8**  
COMPARISON OF THE RAW MEAN CBCL AND TRF SCORES FOR AGE 7–11 YEARS (N=1115)

Scale	Girls – Boys difference <sup>a</sup>		$\gamma^c$	CBCL – TRF difference <sup>b</sup>	
	CBCL	TRF		Girls	Boys
Withdrawn			0.256**		
Somatic Complaints	G>B*		0.249**	C>T**	C>T**
Anxious/Depressed		G<B**	0.167**	C>T**	C>T**
Social problems	G<B*	G>B**	0.286**	C>T**	C>T**
Thought Problems		G<B**	0.150**	C>T**	C>T**
Attention Problems	G<B**	G<B**	0.509**	C<T*	C<T**
Delinquent Behavior	G<B**	G<B**	0.324**	C>T**	C>T**
Aggressive Behavior	G<B**	G<B**	0.389**	C>T**	C>T**
Internalizing		G<B**	0.214**	C>T**	C>T**
Externalizing	G<B**	G<B**	0.401**	C>T**	C>T**
Total Problems	G<B**	G<B**	0.371**	C>T**	C>T**

<sup>a</sup> Independent sample t-test, <sup>b</sup> Paired sample t-test, <sup>c</sup> Pearson correlation coefficient, \* p<0.05, \*\* p<0.01, G=Girls, B=Boys, C=CBCL, T=TRF

**TABLE 9**  
COMPARISON OF THE RAW MEAN CBCL, TRF AND YSR SCORES FOR AGE 12–18 YEARS (N=907)

Scale	Girls-Boys difference <sup>a</sup>		
	CBCL	TRF	YSR
Withdrawn		G>B*	G>B**
Somatic Complaints	G>B**	G>B*	G>B**
Anxious/Depressed		G>B**	G>B**
Social problems	G<B**		
Thought Problems			
Attention Problems	G<B**	G<B**	
Delinquent Behavior	G<B**	G<B**	G<B**
Aggressive Behavior		G<B**	G>B*
Internalizing	G>B*	G>B**	G>B**
Externalizing	G<B**	G<B**	
Total Problems		G<B*	G>B*

<sup>a</sup> Independent sample t-test, \*p<0.05, \*\*p<0.01, G=Girls, B=Boys

parents reported higher scores in boys on Social Problems, Attention Problems, Delinquent Behavior, Aggressive Behavior, Externalizing and Total Problems scales (range from p<0.05 to p<0.001), with one exception for the Somatic Complaints scale (p<0.05) where parents reported higher scores in girls. Teachers also reported higher scores in boys in almost all scales (p<0.01), except in Social Problems scale, where higher scores were reported in girls (p<0.01). Concerning the difference in parents'/teachers' reports, in both boys and girls the parents reported higher scores than teachers in almost all the scales (p<0.01), except in Attention Problems scale where teachers reported higher scores than parents (p<0.01). The agreement between parents' and teachers' reports was statistically significant for (p<0.01), and ranged from 0.15 to 0.51.

The CBCL, TRF and YSR mean values comparison for age 12 to 18 concerning gender differences are shown

**TABLE 10**  
COMPARISON OF THE RAW MEAN CBCL, TRF AND YSR SCORES FOR AGE 12–18 YEARS (N=907)

Scale	CBCL – TRF difference <sup>a</sup>		CBCL – YSR difference <sup>a</sup>		TRF – YSR difference <sup>a</sup>	
	Girls	Boys	Girls	Boys	Girls	Boys
Withdrawn		C>T**	C<Y**	C<Y**	T<Y**	T<Y**
Somatic Complaints	C>T**	C>T**	C<Y**	C<Y**	T<Y**	T<Y**
Anxious/Depressed		C>T*	C<Y**	C<Y**	T<Y**	T<Y**
Social problems			C<Y**	C<Y**	T<Y**	T<Y**
Thought Problems	C>T**	C>T**	C<Y**	C<Y**	T<Y**	T<Y**
Attention Problems	C<T**	C<T**	C<Y**	C<Y**	T<Y**	T<Y**
Delinquent Behavior	C>T**	C>T**	C<Y**	C<Y**	T<Y**	T<Y**
Aggressive Behavior	C>T**	C>T**	C<Y**	C<Y**	T<Y**	T<Y**
Internalizing	C>T**	C>T**	C<Y**	C<Y**	T<Y**	T<Y**
Externalizing	C>T**	C>T**	C<Y**	C<Y**	T<Y**	T<Y**
Total Problems	C>T**	C>T**	C<Y**	C<Y**	T<Y**	T<Y**

<sup>a</sup> Paired sample t-test, \*p<0.05, \*\*p<0.01, C=CBCL, T=TRF, Y=YSR

in Tables 9 and 10. Generally, both parents and teachers reported more internalizing problems in girls, and more externalizing problems in boys. Namely, parents reported more scores in girls in the Somatic Complaints scale ( $p < 0.01$ ) and the Internalizing scale ( $p < 0.05$ ); teachers in Withdrawn, Somatic Complaints, Anxious/Depressed scales ( $p < 0.05$ ) and the Internalizing scale ( $p < 0.01$ ). Parents reported more scores in boys in Social Problems, Attention Problems, Delinquent Behavior, Aggressive Behavior and Externalizing scales ( $p < 0.01$ ); teachers in Attention Problems, Delinquent Behavior, Aggressive Behavior, Externalization and Total Problems scales ( $p < 0.01$ ). The agreement between parents' and teachers' reports was statistically significant ( $p < 0.01$ ); the range was 0.15 to 0.33. In adolescents' reports girls generally reported more problems than boys (range between  $p < 0.05$  and  $0.01$ ), except in the Delinquent Behavior scale ( $p < 0.01$ ), where boys reported more problems. Namely, girls reported more scores in Withdrawn, Somatic Complaints, Anxious/Depressed, Aggressive Behavior, Internalizing, and Total Problems scales.

Comparison of the parents' and teachers' reports according to gender and age 12 to 18 showed that in most scales parents reported more problems in both sexes than teachers (Table 10). Namely, parents reported more scores in girls in Somatic Complaints, Thought Problems, Delinquent Behavior, Aggressive Behavior, Internalization, Externalization and Total Problems scales ( $p < 0.01$ ), except in the Attention Problems scale ( $p < 0.05$ ), where teachers reported more scores. In boys, parents reported more problems in all the scales ( $p < 0.05$ ), except in the Attention Problems scale ( $p < 0.01$ ), where teachers reported more problems. Adolescents of both sexes reported on their problems significantly more in all the scales ( $p < 0.01$ ) than their parents and teachers.

## Discussion

The main goal of this study was to standardize the CBCL, TRF and YSR questionnaire problem scales on subjects aged 7 to 18, children and adolescents in Croatia. This study provided us with standardized CBCL, TRF and YSR data specific for our socio-cultural circle. The CBCL Total Problems mean values for different groups (children/adolescents; boys/girls) range between 17.07 and 20.71. The TRF Total Problems mean values for different groups (children/adolescents; boys/girls) range between 9.49 and 18.11. The YSR Total Problems mean values pursuant to gender were 34.25 and 30.31. The advantage of this study was in implementing questionnaires that satisfied modern psychopathology study criteria i.e. epidemiological research<sup>8–12</sup>. The findings of our research are empiric and subject to further verification in replicate studies; wide enough scope of psychopathology was covered; internal consistency of questionnaires was satisfying; several information sources were used, and we could compare our findings to the original research carried out on the American sample. This approach enabled us to form children/adolescent

profiles as seen from different angles. Generally speaking, we confirmed previous research findings that the adolescents themselves are the most sensitive to their own problems; further, the importance of parents' reports in both children and adolescents must be stressed, and lastly, the teachers' reports on children/adolescents are to be taken into account. Our results confirmed higher agreement among adult informants (parent/teacher), than between adolescents and parents/teachers, which is consistent with the findings found in literature<sup>17,26–29</sup>.

The carried out standardization seems important since the instruments were used outside the culture of their origin. The need for the instruments' standardization in different cultures is reflected in the large number of international studies in various cultures<sup>16,34,35,41–43</sup>. On the one hand, there are the studies that report the similarity of a particular sample and the original American sample, and on the other hand there are the studies that report on big differences in results<sup>34</sup>. Our findings showed significant deviations from the American sample, which suggests greater similarities with the European CBCL, TRF and YSR studies<sup>41</sup>. Namely, our results showed that in the majority of scales, in both parents' and teachers' reports, the American sample suggested bigger problems. On the other hand, our adolescents' reports showed that girls in particular report bigger problems (Somatic Complaints, Attention Problems, Aggressive Behavior and Externalizing scales), than their American counterparts. Our results showed convincingly deeper self-perception in girls when their problems are concerned, which is not equaled by their parents' reports. We tried to explain this finding taking into account our specific transitional-country-socio-cultural problems. Namely, it seems that family as well as school, as structured and traditional supports, loose in significance, and the adolescents are more and more referred to each other, that is, left to cope by themselves. Among various possible influences (biological, psychological and socio-cultural) on our research results it is highly important to stress the recent war in our country during the 1990s, its negative psychological impact on the whole population, as well as war-induced migrations. The impact of these factors is described in other studies<sup>44,45</sup>. Namely, during the course of our research we couldn't resist the impression that the recent war might have had an impact on our subjects, and especially adolescents, who during the 1990s were as children directly or indirectly exposed to traumatic events. This hypothesis, based on our clinical work certainly deserves further verification in target-researches of psycho-trauma influence on emotional and behavioral problems.

The second goal of this study was to compare boys-girls problem scales data and the CBCL-TRF-YSR differences in our sample. Concerning the boys-girls difference both parents and teachers report more problems in boys, aged 7 to 11. This result is consistent with previous researches<sup>37</sup>. We explained it by our clinical observations that at this age i.e. the period of primary educa-

tion, the girls are emotionally, cognitively and socially better prepared for school than boys. This finding should find its implementation in applying different preventive, diagnostic, and (if needed) therapeutic methods according to gender. For example, the overall school environment, that is, school requirements should be more adapted to the needs of children, especially boys. At the same time, the girls' needs shouldn't be disregarded for we can assume that their problems, if they existed, would be less observable.

Concerning the difference in parents'-teachers' reports, in both boys and girls aged 7 to 11 but also in the adolescents aged 12 to 18, the parents reported bigger problems than teachers in almost all the scales, except in the Attention Problems scale where teachers reported bigger problems than parents. This finding is consistent with previous researches that confirmed the importance of parents' perception of children's emotional and behavioral problems<sup>37</sup>. Parents remain one of our most important partners in our future studies. We mustn't neglect the fact that parents might be reporting on problems differently, dependent on various factors: one's own psychopathology, current stress, child's acceptance, child's age, as well as other possible factors<sup>27,46</sup>. On the other hand, it seems that the teachers observe only the problems related to educational or socialization problems such as attention problems, which is consistent with previous researches<sup>34</sup>. Contrary to data found in literature, our research didn't show that teachers observe more internalizing problems<sup>47</sup>. There is also the possibility that teachers' reports were influenced by various factors: the type of disorder (externalizing or internalizing), the type of population (clinical or normative), demographic characteristics e.g. gender, as well as other factors. This finding could find its implementation in continuous teachers' education, which would make teachers more sensitive to other possible emotional and behavioral problems in children and adolescents.

In general, both parents and teachers report more internalizing problems in girls, and more externalizing problems in adolescent boys aged 12 to 18. This finding is consistent with other studies found in literature<sup>28,34,48</sup>, and is considered the universal cultural gender role characteristic difference. According to this, boys are more prone to externalizing problems, which is expressed in their expression of feelings and their activity, while girls are more internally oriented, they seem more introverted and accordingly report more internalizing problems. This finding could find its implementation in different approaches according to gender.

In all the scales the adolescents of both sexes report significantly more on their problems than their parents and teachers. This finding is consistent with previous studies<sup>12,19,20,38,49</sup>. According to this finding the adolescents become positively the most important partners to experts in their approach to adolescent emotional and behavioral problems. This empirical finding is consistent with clinical and psychodynamic position on adolescence as a developmental phase, when processes of in-

tensive separation from childhood objects and adolescents' individuation take place<sup>50</sup>. In view of his/her developmental need for autonomy the adolescent person will more and more separate himself/herself from his/her parents, as well as from his/her internal notions on them. Resolving this constellation enables further development into the world of grownup people.

Further CBCL – YSR comparison shows in favor of the uniformity of parents' reports according to gender, which is consistent with the findings found in literature<sup>16</sup>, that is, it seems there is no trend among parents to report on more problems in adolescent boys than in adolescent girls<sup>9</sup>. We tried to explain this finding by the existence of universal dynamics of separation-individuation in adolescents, which is evenly distributed in both sexes, and from it stems a similar perception of adolescents by their parents.

In adolescents' reports, the girls aged 12 to 18 generally report more problems than boys. This finding is consistent with previous studies<sup>16,38</sup>. This finding could have very clear implication for practice. Namely, one of the implications is the need to detect girls' problems more carefully, because it seems that both parents and teachers are not sensitive enough to detect them.

There were several limitations to this research. Firstly, although the collaboration with local contact persons was planned in advance, there was the doubt of possible inadequate coordination and teamwork in gathering the pre-agreed number of subjects in a random way. Secondly, these being the self-rating questionnaires, there was the limit to subjects' assessment. Namely, we could probably get better-quality psychopathology data through structured clinical interviews, and it would be of great use to introduce this method of approach to emotional and behavioral problems in children and adolescents in our future researches.

In the conclusion, the main goal of this study was to standardize the CBCL, TRF and YSR questionnaires problem scales on subjects aged 7 to 18, children and adolescents in Croatia. This study provided us with standardized CBCL, TRF and YSR data specific for our socio-cultural circle. The advantage of this study was in implementing the questionnaires that satisfy modern and complex psychopathology study criteria. The findings of our research are empiric and subject to further verification in replicate studies; wide enough scope of psychopathology was covered; internal consistency of questionnaires was satisfying; several information sources were used, and we could compare our findings to the original research carried out on the American sample. Our findings showed significant deviations from the American sample, which suggests greater similarities with the European CBCL, TRF and YSR studies. The pre-supposed specific quality of our socio-cultural circle was the recent war we went through in 1990s. This hypothesis certainly deserves further verification in target-researches on psycho-trauma influence on emotional and behavioral problems.



Concerning the difference in parents'-teachers' reports, in both boys and girls aged 7 to 11 but also in adolescents aged 12 to 18, the parents reported bigger problems than teachers in almost all the scales, which suggests the need for teachers' sensibilization to possible emotional and behavioral problems. In general, both parents and teachers report more internalizing problems in girls, and more externalizing problems in adolescent boys aged 12 to 18, which is consistent with other researches found in literature. In all the scales the adolescents of both sexes report significantly more on their problems than their parents and teachers. According to this finding the adolescents become positively the most important partners to experts in their approach to adolescent emotional and behavioral problems. Further scientific verification of psychometric characteristics of

the instruments, as well as comparisons of the results of our CBCL, TRF and YSR study according to different factors would be highly appreciated in near future. It would also be useful to direct future researches toward implementing these instruments on clinical population.

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**PROBLEMSKE SKALE LISTE DJEČJEG PONAŠANJA, IZVJEŠĆA ZA NASTAVNIKE I SAMO-IZVJEŠĆA ADOLESCENATA NORMATIVNOG UZORKA DJECE I ADOLESCENATA DOBI OD 7 DO 18 GODINA IZ HRVATSKE**

**S A Ž E T A K**

Glavni cilj ove studije je bio standardizirati problemske skale upitnika liste dječjeg ponašanja (engl. Child Behavior Checklist, CBCL), izvješća za nastavnike (engl. Teacher Report Form, TRF) i samo-izvješća adolescenata (engl. Youth Self Report, YSR) na normativnom slučajnom uzorku djece i adolescenata (N=3309) u dobi od 7 do 18 godina, iz cijele Hrvatske. Drugi cilj je bio usporediti razlike problemskih skala dječaka-djevojaka i razlike CBCL-TRF-YSR. Srednja vrijednost skorova CBCL za skalu Totalni Problemi za različite grupe (djeca/adolescenti; dječaci/djevojčice) su se kretale od 17.07 do 20.71. Ukupna unutarnja konzistencija za instrumente se kretala od 0.83 do 0.86. U gotovo svim skalama roditelji su davali veće skorove nego nastavnici ( $p < 0,01$ ). Adolescenti su davali značajno veće skorove u svim skalama u odnosu na roditelje i nastavnike ( $p < 0,01$ ). Ovim radom smo standardizirali upitnike za našu specifičnu socio-kulturnu sredinu, koji zadovoljavaju kriterije kompleksne studije psihopatologije. Dobiveni rezultati nas upućuju na sličnost s europskim provedenim istraživanjima.