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## Parent-Teacher Agreement On Cognitive Disengagement Syndrome Symptoms In School-Age Children

# Okul Çaği Çocuklarında Bilişsel Kopma Sendromu Bulguları Açisindan Ebeveyn-Öğretmen Uyumu

Akın Tahıllıoğlu<sup>1\*</sup>, Burcu Kardaş<sup>2</sup>, Ömer Kardaş<sup>2</sup>, Nagihan Saday Duman<sup>3</sup>, Emel Sarı Gökten<sup>4</sup>, Merve Çıkılı Uytun<sup>5</sup>, Özlem Kahraman<sup>6</sup>, Esra Demirci<sup>7</sup>, Ayşe Irmak Taşdemir<sup>8</sup>, Zeyneb Lushi Şan<sup>9</sup>, Funda Dönder Şen<sup>10</sup>, Elif Kurt Yılmaz<sup>11</sup>, Gamze Yılmaz Türkel<sup>12</sup>, Merve Ergüven Demirtaş<sup>13</sup>, Eyüp Sabri Ercan<sup>14</sup>

<sup>1</sup> Department of Child and Adolescent Psychiatry, Private Outpatient Clinic, İzmir/Türkiye
<sup>2</sup> Department of Child and Adolescent Psychiatry, Kocaeli University Faculty of Medicine, Kocaeli/Türkiye
<sup>3</sup> Department of Child and Adolescent Psychiatry, Private Outpatient Clinic, Ankara/Türkiye
<sup>4</sup> Department of Child and Adolescent Psychiatry, Private Outpatient Clinic, İstanbul/Türkiye
<sup>5</sup> Department of Child and Adolescent Psychiatry, Faculty of Medicine, Ankara University, Ankara/Türkiye
<sup>6</sup> Department of Child and Adolescent Psychiatry, Kayseri Education and Research Hospital, Kayseri/Türkiye
<sup>7</sup> Department of Child and Adolescent Psychiatry, Erciyes University Medical School, Kayseri/Türkiye
<sup>8</sup> Department of Child and Adolescent Psychiatry, Karamanoğlu Mehmetbey University, Faculty of Medicine, Karaman/Türkiye
<sup>9</sup> Department of Child and Adolescent Psychiatry, Sivas State Hospital, Sivas/Türkiye

<sup>11</sup> Department of Child and Adolescent Psychiatry, Private Outpatient Clinic, Kocaeli/Türkiye
<sup>12</sup> Department of Child and Adolescent Psychiatry, Gülhane Education and Research Hospital, Ankara/Türkiye
<sup>13</sup> Department of Child and Adolescent Psychiatry, Ankara City Hospital, Ankara/Türkiye
<sup>14</sup> Department of Child and Adolescent Psychiatry, Faculty of Medicine, Ege University, İzmir/Türkiye

e-mail: tahillioglua@gmail.com , burcu-atar@hotmail.com , kardasomer@gmail.com , n\_saday@hotmail.com , emelsargokten@yahoo.com.tr , mervecikili@yahoo.com , ozzlemkhrmn@hotmail.com , esra\_z\_d\_r@hotmail.com , irmakayse@yahoo.com , zeyneblushi@hotmail.com , fundadr.fd@gmail.com , dr.elifkurt@yahoo.com.tr , gamze\_s\_mb@hotmail.com , mrv\_erg@hotmail.com , eyercan@hotmail.com

ORCID: 0000-0002-3952-3672 ORCID: 0000-0002-2912-8097 ORCID: 0000-0003-2241-2367 ORCID: 0000-0002-7521-6354 ORCID: 0000-0002-3734-7895 ORCID: 0000-0002-2381-5742 ORCID: 0000-0002-3690-0268 ORCID: 0000-0002-3457-2467 ORCID: 0000-0002-3457-2467 ORCID: 0000-0002-8087-5805 ORCID: 0000-0002-8087-5805 ORCID: 0009-0003-1893-0177 ORCID: 0009-0006-2665-440X ORCID: 0000-0002-6968-467X ORCID: 0000-0002-9844-8342

\*Sorumlu Yazar / Corresponding Author: Akın Tahıllıoğlu Gönderim Tarihi / Received: 15.09.2024 Kabul Tarihi / Accepted: 04.11.2024 DOI: 10.34087/cbusbed.1550016 Giriş ve Amaç: Bu çalışmanın amacı, okul çağındaki çocuklarda Bilişsel Kopma Sendromu (BKS) semptomlarının değerlendirilmesinde ebeveyn ve öğretmen bildirimlerinin ne kadar uyumlu olduğunun incelenmesidir.

Gereç ve Yöntemler: Örneklem Türkiye'nin dört büyük şehrinden 7 ila 11 yaş aralığında rastgele seçilen 268 çocuktan oluşan epidemiyolojik bir örneklemdir. Hem ebeveynler hem de öğretmenler, Barkley Yavaş Bilişsel Tempo Ölçeği-Çocuklar ve Ergenler (BYBTÖ-ÇE) ve BKS-Çocuk ve Ergenlerde Davranış Değerlendirme Ölçeği'ni (BKS-ÇDDÖ) doldurmuşlardır. BKS ile ilgili ebeveyn ve öğretmen puanlamaları arasındaki uyum ve korelasyonlar, Cohen'in Kappa ( $\kappa$ ) ve Spearman Rho (r) katsayıları aracılığıyla değerlendirilmiştir.

**Bulgular:** Olgularda BKS'nin varlığına veya yokluğuna yönelik olarak ebeveynler öğretmenlerle uyum içinde saptanmamıştır (BYBTÖ-ÇE değerlendirmesine göre  $\kappa$ =0,143, p=0,042; BKS-ÇDDÖ değerlendirmesine göre  $\kappa$ =0,039, p=0,366). Ancak, ebeveyn ve öğretmenlerin BYBTÖ-ÇE'nin BKS-gündüz düşleri ve BKS-yavaşlık puanlamaları orta düzeyde korelasyon (sırasıyla r=0,375, r=0,305; tüm p<0,001), BKS-ÇDDÖ toplam puanlamaları ise düşük düzeyde korelasyon göstermiştir (r=0,290, p<0,001). Ebeveyn ve öğretmen değerlendirmeleri arasında 12 BYBTÖ-ÇE maddesinin 9'unda (tüm r<0,26, tüm p<0,05) ve 4 BKS-ÇDDÖ maddesinin 3'ünde (tüm r<0,16, tüm p<0,05) düşük düzeyde korelasyon saptanmıştır.

**Sonuç:** Bulgular, ebeveynler ve öğretmenlerin okul çağındaki çocuklarda BKS'yi değerlendirmede düşük düzeyde fikir birliği ve uyum içinde olduğunu göstermektedir. Her iki BKS semptom boyutunda orta düzeyde korelasyon saptanmasına rağmen, neredeyse tüm BKS semptomlarındaki uyum ebeveynler ve öğretmenler arasında düşük düzeyde kalmaktadır. Sonuçlar farklı kültürlerde değişebilse de klinisyenler okul çağındaki çocukları BKS açısından değerlendirirken BKS semptomları açısından değerlendiriciler arasındaki uyumun düşük düzeyde olmasını dikkate almalıdırlar.

Anahtar kelimeler: bilişsel kopma sendromu, ebeveyn-öğretmen uyumu, değerlendirme, konkordans, BKS, yavaş bilişsel tempo

#### Abstract

Aim: This study examined how well parent and teacher reports are concordant in evaluating Cognitive Disengagement Syndrome (CDS) symptoms in school-age children.

**Method:** The epidemiological sample consisted of 268 randomly chosen children aged 7 to 11 from four metropolitan cities in Turkey. Both parents and teachers evaluated the children by completing the Barkley Sluggish Cognitive Tempo Scale- Children and Adolescents (BSCTS-CA) and the CDS-Child Behavior Checklist (CDS-CBCL). Agreement and correlations between parent and teacher reports regarding CDS were assessed via coefficients of Cohen's Kappa ( $\kappa$ ) and Spearman's Rho (r).

**Results:** Parents were not in agreement with teachers concerning the presence/absence of CDS ( $\kappa$ =0,143, p=0,042 according to BSCTS-CA evaluation;  $\kappa$ =0,039, p=0,366 according to CDS-CBCL evaluation). However, parent and teacher ratings on CDS-daydreaming and CDS-sluggish scores of BSCTS-CA showed medium correlation (r=0,375, r=0,305; respectively; all p<0,001); whereas showed low correlation on CDS-CBCL total scores (r=0,290, p<0,001). Parent and teacher ratings showed low correlations on 9 out of 12 BSCTS-CA items (all r<0,26, all p<0,05) and on 3 out of 4 CDS-CBCL items (all r<0,16, all p<0,05).

**Conclusion:** The findings demonstrate that parents and teachers are in low agreement and concordance in evaluating CDS in school-age children. Despite medium-level correlations on both CDS symptom dimensions, the concordance between parents and teachers on almost all CDS symptoms remains at low levels. Although the outcomes may vary across different cultures, clinicians should pay regard to low inter-rater agreement on CDS symptoms in school-age children while evaluating them for CDS.

**Keywords:** cognitive disengagement syndrome, parent-teacher agreement, assessment, concordance, CDS, sluggish cognitive tempo

#### 1. Introduction

Cognitive Disengagement Syndrome (CDS, formerly known as Sluggish Cognitive Tempo) is characterized by daydreaming, having difficulty staying awake, seeming puzzled, staring with empty eyes, and slow motions [1, 2]. Historically, CDS was considered as a sub-type of Attention-Deficit/ Hyperactivity Disorder (ADHD). However, this understanding has been abandoned for at least 15 years. Instead, researchers claimed that CDS should

be handled as a transdiagnostic construct [3]. Finally, a working group on sluggish cognitive tempo concluded the need for terminological change for this structure and introduced the term 'Cognitive Disengagement Syndrome' [4]. Recently, CDS has been approved as being a syndrome or a transdiagnostic construct. Nevertheless, it is still not involved in international psychiatric classification systems like the Diagnostic and Statistical Manual of Mental Disorders (DSM) yet.

Although CDS is widely recognized as a clinical syndrome that overlaps with ADHD but is entirely independent of it [5, 6], the fact that formal diagnostic criteria for CDS have not yet been established is an essential factor that makes CDS challenging to recognize by clinicians. Given that CDS brings negative life consequences regarding social relationships [7], academic success [8], accompanying comorbidity patterns [2] and stressful life events [9]. Being able to recognize that children have CDS accurately is becoming increasingly important. In this case, collecting and validating reports from parents and teachers on children's symptomatology about CDS still have a pivotal role in recognizing and diagnosing psychopathological structures like CDS.

However, parent and teacher reports may not always be compatible. There is widespread data in the literature indicating that the reports of parents and teachers in the evaluation of children in child psychiatry clinical practice do not agree to a high degree. In the literature, a substantial number of studies report low or moderate parent-teacher agreement in terms of ADHD symptoms with the inter-rater correlation coefficients ranging from 0.03 to 0.63 [10-14]. As for CDS, a recent study indicated poor agreement between parent and teacher reports on whether children have CDS or not. The authors reported relatively low correlations concerning children's CDS symptoms between mother and teacher reports ranging from 0.29 to 0.37 and between father and teacher reports ranging from 0,18 to 0,26 [15]. Another study pointed out significant but much lower correlations between mother-teacher ratings (0,43) and between fatherteacher ratings (0,42) on CDS symptoms [16].

Since it is evident that there is a scarcity of research on this topic, and no study exists from Türkiye, it is pretty crucial to discover to what extent parent reports are concordant with teacher reports on children's CDS symptoms in a different geographical region, such as Euroasia. Ascertaining the levels of agreement between parents and teachers in a different population may enable clinicians to perform more precise approaches when evaluating children for CDS. Based on this motivation, we aimed to investigate to what extent parent and teacher reports are concordant with each on children's CDS symptoms. other hypothesized that parent and teacher reports concerning the presence/absence of CDS would be in poor agreement, and parent and teacher reports concerning children's CDS symptoms would be poorly correlated.

#### 2. Methods 2.1Study Design

This study was part of a study investigating epidemiological features of CDS in the Turkish children population [17]. The multi-centered, crosssectional study was conducted with second-, third-, and fourth-grade students residing in 4 Turkish metropolitan cities (İzmir, Bursa, Kocaeli, and Kayseri). Ethical approval was obtained from the Ege University Ethical Committee of Clinical Research (decision no: 15-11/3).

## 2.2.Sample

Before recruiting the cases, we conducted a G-power analysis to determine the minimum necessary sample size for the study. According to the power analysis, the minimum sample size was 265 children, with a 4.5% frequency of CDS, a 4% variance level, and a 95% confidence level. We determined 11 schools and 42 classrooms with a randomized stratification method regarding low/middle/high socioeconomic status classified by the Provincial Directorate of National Education of each city. Afterward, we determined the students who ranked fourth place and multiples of four in the beginning lists of each class. After excluding cases with missing data, the study was completed with the remaining 268 cases, whose ages ranged from 7 to 1 2.3.Measurement Materials

# 2.3.1 CDS scanning scale of Child Behavior

**Checklist (the CDS-CBCL)** The CBCL is a behavioral assessment scale developed by Achenbach and Edelbroh for children and adolescents between 4 and 18 years old [18]. Having adapted to Turkish, Erol et al. performed a validity and reliability study of the 1991 version of the scale [19]. Four items included in the CBCL are part of the CDS-CBCL and have been utilized in previous studies to assess CDS [17, 20, 21]. The score ranges from 0 to 8. Generally, a total score of 4 is accepted as a cut-off point [17, 20]. The Cronbach's  $\alpha$  value was measured as 0.713 for the parent- rated CDS-CBCL and 0.743 for teacher-rated CDS-CBCL items in the current study.

### 2.3.2.Barkley Sluggish Cognitive Tempo Scale – Children and Adolescents (BSCTS-CA)

The BSCTS-CA consists of 12 items and was developed by Russell Barkley [2, 5]. Internal consistency (Cronbach's  $\alpha$ ) was 0,934, and test-retest reliability was r = 0,84 in the original form. The validity and reliability study of the Turkish version was conducted in 2018 [22]. The BSCTS-CA has two dimensions: 'sluggishness' and 'daydreaming.' In this study, Cronbach  $\alpha$  values were detected as 0,86 for the total, 0,83 for the daydreaming factor, and 0,80 for the sluggishness factor. The scale score ranges from 12 to 48. In order to determine the cases with higher and lower CDS, Barkley's symptom count procedure was adopted [2]. In this procedure, the cases rated as occurring "often" or "very often" on at least three items were

approved as they reached over the threshold of 3 or more symptoms, which was chosen as the cut point [2]. A similar approach has been performed in previous studies [17, 23, 27].

#### **2.4Procedures**

Firstly, teachers filled out the CDS-CBCL and the BSCTS-CA. Secondly, we contacted the participants' parents and invited them to a clinical interview. Just as teachers did, parents filled out the same scales. Thirdly, we conducted a semi-structured psychiatric interview with the participants and their parents to scan their psychopathologies.

#### 2.4.1Statistical Analysis

The Statistical Package for Social Sciences version 22.0 software (IBM Corp.; Armonk, NY, USA) was used to compute analyses. A comparison of categorical variables was performed via Pearson chisquare analysis. Descriptive statistics of qualitative variables were expressed as a number and a frequency (%). To investigate the agreement degree between parents and teachers concerning the presence/absence of CDS structure, we used Cohen's Kappa coefficient ( $\kappa$ ), which is a statistic that is used to measure inter-rater agreement for categorical items [24]. Landis and Koch stated that kappa values of 0.81-1.00 represent excellent agreement, those between 0.61 and 0.80 indicate substantial agreement, those between 0.41 and 0.60 represent moderate agreement, those between 0,21 and 0,40 indicate fair agreement, and those between 0,01 and 0,20 represent insignificant agreement [25]. We also used bivariate Spearman correlation analysis to determine the correlations of CDS symptoms between parent and teacher ratings. A correlation coefficient (Spearman's rho) of 0,50 indicates a large effect, 0.30 for a medium effect, and 0.10 for a small effect [26].

## 3. Results and Discussion

#### 3.1 Results

The mean age was  $8,75 \pm 0,95$  years for the total sample,  $8,74 \pm 0,94$  for boys, and  $8,76 \pm 0,96$  for girls. There was no statistically significant difference in age across genders. Of 268 cases, 144 (53,7%) were boys, and 124 (47,3%) were girls.

7,1% of the participants (n = 19) scored above the clinical cut-off on the BSCTS-CA when rated by parents. The percentage of the cases with higher CDS was 7,5% (n = 20) when teachers rated the BSCTS-CA. According to the CDS-CBCL measurement performed by parents, 4,9% (n = 13) of the cases scored above the clinical cut-off. When teachers filled out the CDS-CBCL, the prevalence of CDS was found to be 10,9% (n = 29). These prevalence rates are presented in Table 1.

We conducted Spearman's correlation analysis to investigate the correlations between parent- and teacher-reported CDS symptoms. The findings are demonstrated in Figures 1 and 2. When BSCTS-CA- based item ratings of parents and teachers were compared, it was detected that there were mediumlevel correlations between parent and teacher reports in both 'CDS-daydreaming' and 'CDS-sluggish' dimensions (respectively; r = 0,375; r = 0,305; both p < 0,001). Looking detailed through the BSCTS-CA items, parent and teacher reports showed a medium level of correlation on item 9 only (does not seem to understand as quickly) (r = 0.352, p < 0.01), and low level of correlations on items 1, 3, 4, 5, 6, 7, 8, 10, and 11 (all r < 0.26, all p < 0.05). When CDS-CBCL-based item ratings of parents and teachers were compared, the total CDS-CBCL score was poorly correlated between parent and teacher reports (r=0,290, p<0,001). Three out of four CDS-CBCL items ('looks wooly-minded and confused,' 'stares for a long time with blank eyes,' and 'he/she is immobile, slow, and not energetic') showed low levels of correlations (all r < 0.16, all p < 0.05) while one item ('daydreams and forgets only himself/herself') had no significant correlation between parent and teacher reports.

As for the inter-rater agreement on the presence of CDS structure, the analyses revealed that parents were not found to be in significant agreement with teachers concerning the presence/absence of CDS when the measurement tool was either the BSCTS-CA or the CDS-CBCL (respectively;  $\kappa = 0,143$ , p = 0,042;  $\kappa = 0,039$ , p = 0,366; see Table 1).

	Parent-rated	Teacher-rated		
CDS measurement tool	CDS (+) cases	CDS (+) cases	к	p*
	N (%)	N (%)		
BSCTS-CA <sup>1</sup>	19 (7,1)	20 (7,5)	0,143	0,042
CDS-CBCL <sup>2</sup>	13 (4,9)	29 (10,9)	0,039	0,366
Note. <i>BSCTS-CA:</i> Barkley Sluggish Cognitive Tempo Scale-Children and Adolescents; <i>CDS-CBCL:</i> CDS-Child Behavior Checklist; <i>CDS: Cognitive Disengagement Syndrome</i> *Fisher's Exact Test; $\kappa$ = Cohen's Kappa; <sup>1</sup> n = 268; <sup>2</sup> n = 266.				

Table 1. Inter-rater agreement regarding the presence/absence of CDS

Figure 1. The correlation between parent and teacher ratings on both CDS dimensional symptoms in BSCTS-CA.



n = 243; \* p < 0,05; \*\* p < 0,01





n = 256; \* p < 0,05; \*\* p < 0,01

#### 3.2. Discussion

In this study, we investigated to what extent parents' and teachers' perspectives on children's CDS symptomatology are compatible. Our study revealed that parent ratings generally have low correlations with teacher ratings. Moreover, parent reports did not agree with teacher reports regarding whether the children had threshold CDS.

Our results are in line with previous studies. For instance, according to a recent study, both mother and father reports showed weak correlations with teacher reports on children's CDS symptoms, with the magnitudes ranging from 0,29 to 0,37 and from 0,18 to 0,26, respectively [15]. Supportively, another study revealed that mother and father ratings showed significant but moderate correlations with teacher ratings on CDS symptoms with the magnitudes of 0,42-0,43 [16]. Consistent with these values, most CDS symptom items on BSCTS-CA had low to moderate correlations, with correlation coefficients ranging from 0,14 to 0,35 between parent and teacher ratings. Compared to the BSCTS-

CA, the CDS-CBCL items and total score were correlated between the two informants at a much lower level. This condition might be because the factor structures of the BSCTS-CA have been better established than those of the CDS-CBCL. Similar to the symptomatological correlates between the two informants, the agreement level between the two informants in reporting the categorical existence of CDS was also quite meager. When the BSCTS-CA was used as the measurement tool, the compatibility coefficient (k) between parent and teacher reports was only 0,14. Consistently, Mayes et al. also detected quite low levels of agreement between mother and teacher reports ( $\kappa = 0,17$ ) and between father and teacher reports ( $\kappa = 0,12$ ) on children's CDS status [15].

Although outcomes from our study and a few previous studies indicate very low concordance between parent and teacher observations in assessing CDS symptoms, this low concordance between teacher and parent ratings is not specific to CDS assessment. Parent observations do not identically match teacher observations, and parentteacher agreement is also poor while evaluating children for ADHD [27], externalizing behavioral problems [28] or internalizing problems [29]. In the literature, a substantial number of studies report low or moderate parent-teacher agreement in terms of ADHD symptoms, with the inter-rater correlation coefficients ranging from 0,03 to 0,63 [10 - 12]. In a Turkish study conducted with an epidemiological sample. parent-teacher agreement for the presence/absence of ADHD diagnosis was low, with a kappa value of 0,367. Also, that study found that parent and teacher reports on ADHD symptoms showed small to medium correlations [27]. Some assumptions can be made for this incompatibility between two informants. Teacher observation is only based on the school area and provides information about academic and social functioning and behavioral patterns of children restricted to the school area. Since parents have more time with their children anywhere outside the school, their observation may reflect the emotional and behavioral patterns that may be more related to house and exterior areas. On the other hand, teachers have the opportunity to observe hundreds of children at the same time and have the capability to compare them with each other. Parents are restricted to observing only their own children and do not have the opportunity to compare them with other children. Because of these differences in observations, parent and teacher reports on various psychiatric symptoms, as well as CDS, may be incompatible with each other. This condition puts forward that, just like other pediatric psychiatric disorders, the diagnosis should not be made by relying on information obtained from only one informant in the evaluation of CDS and that a multi-informant assessment approach should be included in the processes of understanding CDS by clinicians.

Our study has some limitations. First, despite the epidemiological nature of the sample, the sample size was small. This situation restricted the generalizability of the outcomes. Second, since the sample group in our study represented only elementary school students between the ages of 7 and 11 years, generalizing these results to children and adolescents from other age groups would not be appropriate. Third, although the CDS-CBCL is a commonly preferred scale in the studies of CDS, as a composite, it may not be an adequate symptom item for CDS. The factor structures of the CDS-CBCL have been worse established than those of the BSCTS-CA. Hence, this condition should be interpreted as a limitation.

#### 4. Conclusion

In conclusion, our study provided the first estimates about the agreement and concordance between Turkish parents and teachers in reporting Turkish children's CDS symptomatology. Just like in Western populations, Turkish parents and teachers are in poor concordance and agreement on CDS symptoms in school-age children. This outcome highlights the importance of which information obtained from which informants clinicians should use more efficiently in what way when evaluating CDS in children. Future studies should be conducted with larger samples with a broader age range. Besides, investigating the diagnostic accuracy levels of parents' and teachers' CDS assessments would be a path-breaking discovery.

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#### 6. References

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