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**Psychometric Properties of the Cognitive Behaviour Therapy Scale for Children and Young People (CBTS-CYP) in a Turkish Sample**

Journal:	<i>Behavioural and Cognitive Psychotherapy</i>
Manuscript ID	BCP-01982-21.R1
Manuscript Type:	Main
Keywords:	behavioural cognitive therapy, children and adolescents, therapist competence
Abstract:	<p><b>ABSTRACT</b></p> <p>Background: Cognitive behavioural therapy (CBT) training is highly demanded by clinicians, however a standardized competence assessment for professionals working with children and young people (CYP) can be problematic. Psychometric tools used for this purpose are typically adult oriented measures. Aim: The present study provides psychometric properties of The Cognitive Behaviour Therapy Scale for Children and Young People (CBTS-CYP) derived from a comparative analysis with Cognitive Therapy Scale (CTS). Method: The CBTS-CYP was used alongside CTS in a CBT supervision training course, consisting of a cohort of 51 therapists. A total of 36 audio/video recorded full CBT sessions were assessed for the purpose of determining CBT competence and adherence to the theory and model. The training involved a total of 80 hours of supervision in 10 meetings via an online videoconferencing platform between July 2020 and February 2021. Results: Face validity and inter-rater reliability of CBTS-CYP were high with the intraclass correlation values being good (0.60-0.74) or excellent (0.74 and above); the correlations of each CBTS-CYP and CTS items were significant; internal consistency of the scale showed that Cronbach alpha values for total-scale and its two subdimensions were above .93. For a cut-off score of 55 out of 90, sensitivity reached 90.73% and specificity 90.73%. A score of 2 points or above from any single item could be considered as the second minimum criterion for competence. Conclusions: CBTS-CYP offers a valid and reliable scale to evaluate the competence and adherence quality of CBT sessions with children and adolescents.</p>

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## Psychometric Properties of the Cognitive Behaviour Therapy Scale for Children and Young People (CBTS-CYP) in a Turkish Sample

### ABSTRACT

**Background:** Cognitive behavioural therapy (CBT) training is highly demanded by clinicians, however a standardized competence assessment for professionals working with children and young people (CYP) can be problematic. Psychometric tools used for this purpose are typically adult oriented measures. **Aim:** The present study provides psychometric properties of The Cognitive Behaviour Therapy Scale for Children and Young People (CBTS-CYP) derived from a comparative analysis with Cognitive Therapy Scale (CTS). **Method:** The CBTS-CYP was used alongside CTS in a CBT supervision training course, consisting of a cohort of 51 therapists. A total of 36 audio/video recorded full CBT sessions were assessed for the purpose of determining CBT competence and adherence to the theory and model. The training involved a total of 80 hours of supervision in 10 meetings via an online videoconferencing platform between July 2020 and February 2021. **Results:** Face validity and inter-rater reliability of CBTS-CYP were high with the intraclass correlation values being good (0.60-0.74) or excellent (0.74 and above); the correlations of each CBTS-CYP and CTS items were significant; internal consistency of the scale showed that Cronbach alpha values for total-scale and its two subdimensions were above .93. For a cut-off score of 55 out of 90, sensitivity reached 90.73% and specificity 90.73%. A score of 2 points or above from any single item could be considered as the second minimum criterion for competence. **Conclusions:** CBTS-CYP offers a valid and reliable scale to evaluate the competence and adherence quality of CBT sessions with children and adolescents.

### INTRODUCTION

Cognitive behavioural therapy (CBT) is the most widely studied form of psychotherapy (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012) and has been widely accepted by clinicians, researchers and service users as the first-line therapeutic approach for many child and adolescent mental health problems (Butler, Chapman, Forman, & Beck, 2006). This popularity has given rise to many clinicians using CBT methods resulting in clinicians presenting themselves as CBT practitioners even though they have not received sufficient training nor

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2  
3 acquired the necessary skills to deliver CBT competently This results in the effectiveness of  
4 CBT being diluted and the expectations of service users not being met (Friedberg, 2014).  
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6 Becoming a competent CBT practitioner requires a vigorous training process involving both  
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8 theoretical awareness, skills-based practice and supervision from experienced CBT trainers.  
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10 Subsequently, this raises the question of how the competence of a CBT practitioner working  
11  
12 with the child and adolescent population can be evaluated most objectively and based on  
13  
14 what criteria.  
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16  
17 In CBT, competence is defined as the degree to which the therapist demonstrates the general  
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19 therapeutic and treatment-specific skills required to properly implement evidence-based CBT  
20  
21 interventions (Muse & McManus, 2013). Roth and Pilling (2007) grouped a list of more than  
22  
23 fifty 'core competences' needed to provide effective CBT in 5 key areas: general therapeutic  
24  
25 competences (adequate knowledge in mental health and effective communication with the  
26  
27 patient); general competencies related to CBT (ability to understand and explain CBT  
28  
29 rationale); CBT specific competence (skills such as guided discovery, use of thought records);  
30  
31 problem-specific competencies (awareness and ability to use problem-specific treatment  
32  
33 manuals); and meta competencies (the capacity to choose and apply the most appropriate  
34  
35 CBT method) (A. Roth & Pilling, 2007). A related concept is therapy fidelity or adherence.  
36  
37 Adherence refers to the extent to which the therapist's approach fits the model of therapy  
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39 (Muse & McManus, 2013), how faithful therapy is to the theory, and to what extent the  
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41 therapy guidelines remain within the proposed frameworks. Several frameworks have been  
42  
43 proposed that aim to draw attention to and thus close the gap between routine CBT practice  
44  
45 in the clinical room and ideal CBT. The framework proposed by Roth and Pilling (2008) offers  
46  
47 a very comprehensive definition for CBT competence (A. D. Roth & Pilling, 2008). Miller, G.E.  
48  
49 (1990), on the other hand, offers a framework model for competence where clinical skills are  
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51 assessed in four hierarchical categories: knowledge (knows), practical understanding (knows  
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53 how), skills (shows how), and clinical practice (does) (Miller, 1990). A successful CBT  
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55 application should be evaluated by both how much adherence is provided to the cognitive  
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57 model of therapy and how competently therapy techniques are applied (McGlinchey &  
58  
59 Dobson, 2003).  
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3 The two most commonly used and widely regarded as “gold standard” measures for assessing  
4 CBT competence with adults (Muse & McManus 2013) are the Cognitive Therapy Scale- (CTS,  
5 (Young & Beck, 1980)) and the Cognitive Therapy Scale Revised (CTS-R, (Blackburn et al.,  
6 2001)). Both scales evaluate the clinicians' direct practice, have good psychometric properties,  
7 and are frequently used in CBT training settings. However, while these scales are valuable,  
8 they do not address competence issues specific to undertaking CBT with children and  
9 adolescents. They were developed for use with adults and do not reflect the developmental  
10 issues that arise when practicing CBT with children and adolescents. This lack of  
11 developmental sensitivity has been questioned (Fuggle, Dunsmuir, & Curry, 2012). In  
12 particular, systemic influences in the onset and maintenance of the child's problems need to  
13 be considered; appropriate adaptations to CBT should be made to reflect the child's  
14 developing cognitive, emotional, linguistic and reasoning abilities; a richer creative ability and  
15 greater use of non-verbal methods are required to communicate abstract concepts in simpler,  
16 clearer and more understandable ways (Fuggle et al., 2012; Stallard, 2020). This is consistent  
17 with others who found that the factor structure of the CTS differs depending on the clinical  
18 population it is used with (Affrunti & Creed, 2019).  
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34 The Cognitive Behaviour Therapy Scale for Children and Young People (CBTS-CYP) (Stallard,  
35 Myles, & Branson, 2014) was developed to provide an objective assessment of general CBT  
36 competence when working with children and adolescents. The aim was to develop a scale to  
37 assess the overall quality and adequacy of the CBT applied in the therapy session, rather than  
38 a detailed assessment of the way specific techniques such as exposure, behavioural  
39 experiments or guided discovery were conducted. The initial UK evaluation demonstrated that  
40 the CBTS-CYP had good reliability and face validity, and matched well with the CTS-R in  
41 discriminative ability based on total score and single item criteria (Stallard et al., 2014).  
42 However, it would be valuable to investigate how valid and reliable the CBTS-CYP is in  
43 assessing CBT applied in different linguistic and cultural settings, and to conduct a comparative  
44 analysis with other CBT competence measuring tools more commonly used there.  
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## 56 **AIM**

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58 There is increased interest in the development of Cognitive Behavioural Therapy (CBT) training  
59 in Turkey. There are two associations operating in Turkey in order to make CBT available to  
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2  
3 wider patient populations and thus to enable more mental health professionals to access CBT  
4 training. These associations are accredited by the European Association for Behavioral and  
5 Cognitive Therapies (EABCT) and offer training in accordance with EABCT and Academy of  
6 Cognitive Therapy (ACT) standards. However, CBT is a relatively new field of clinical practice  
7 in Turkey and the number of experienced and nationally/internationally accredited CBT  
8 trainers and supervisors in this field is low. This poses an even greater problem for  
9 professionals working with children and adolescents. Session recordings submitted for routine  
10 supervision or, in particular, for the purpose of accreditation are often made by assessors who  
11 do not have experience of working with children and adolescents, using CBT competence  
12 assessment scales that are not specific to this age group.

13  
14 Therefore, the aim of the present study is to determine whether the CBTS-CYP is a valid and  
15 reliable tool for assessing CBT competence in the Turkish sample, in comparison with the CTS  
16 currently used in Turkey for this purpose. As a result, a CBT competence assessment tool more  
17 suitable for the paediatric age population will be made available to mental health  
18 professionals working in this field.

## 31 32 **METHOD**

### 33 34 **Sample and Procedure**

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36 The Cognitive Behaviour Therapy Scale for Children and Young People (CBTS-CYP) was used in  
37 a CBT supervision course that involved a total of 80 hours of supervision in 10 meetings via an  
38 online videoconferencing platform between July 2020 and February 2021. The training was  
39 organized by the Turkish Association of Cognitive Behavioural Psychotherapies (BDPD), which  
40 was established in 2011 with the aim of advancing CBT training in Turkey and one of two  
41 organizations accredited by the EABCT.

42  
43 CBT supervision training for supervisees is attended by approximately fifty trainees who have  
44 passed the exam at the end of the 80-hour theoretical training. A week before the online  
45 supervision meeting, the trainee shares with all other trainees a preliminary information form  
46 that includes the case summary from a developmental perspective, case conceptualization,  
47 therapy goals and a summary of what has been done in the previous therapy sessions. The  
48 trainee also shares the audio or video recording of the session with the supervisor, provided  
49 that written consent is obtained from the patient. The recorded session is listened to/watched  
50 by the group and then scored by all participants, including the supervisor and the trainee

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2  
3 themselves, through an electronic Google survey form containing the items in CTS and CBTS-  
4 CYP (CETPÖ). The result of this scoring -if the trainee approves- is shared with the whole group.  
5  
6 Thus, the trainee will have the opportunity to compare his own score for his performance with  
7 the points given to his performance by the supervisor and the peer group. Afterwards,  
8 feedback is received from the trainee and other participants about the session and the therapy  
9 process. It is then concluded with the feedback from the supervisor and discussion about the  
10 strengths of the therapist and the aspects that need to be improved. If necessary, skill-building  
11 activities are carried out through role-play. The length of the shared sessions is usually around  
12 40 minutes, and approximately 4 cases are supervised each training day. Since there is no  
13 obligation to share cases in these supervisions, it is also a learning experience for those who  
14 are not ready to share their sessions in the supervision environment for various reasons.  
15 Preliminary information forms about shared cases provide a rich and practical resource for all  
16 participants with important information such as case summaries, problem formulation,  
17 therapy goals, exposure hierarchy etc.  
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31 Data was collected from 51 different therapists attending the CBT supervision training who  
32 evaluated a total of 36 different clinical cases. The Cognitive Therapy Scale (CTS) was used by  
33 the rating therapists in the sessions together with the CBTS-CYP. Of the 51 therapists, one was  
34 an internationally accredited trainer and supervisor and five were experienced child and  
35 adolescent CBT therapists accredited by EABCT and ACT. The remaining therapists (n=45) had  
36 at least 80 hours of formal CBT training and were practicing CBT as one of the main therapeutic  
37 modalities in their daily clinical work. The Supervisees were a group of mental health  
38 practitioners with different professional backgrounds and practicing in different working  
39 settings including a Tier-3 Child and Adolescent Mental Health Unit and private practice. They  
40 brought to the supervision the audio/video recordings of the cases they see in their daily  
41 practice to benefit from an environment of peer supervision and feedback from more  
42 experienced clinicians and accredited CBT trainers/supervisors. The choice of recorded  
43 sessions brought to the supervision were completely at the discretion of the supervisee. The  
44 client population consisted of children and young people aged between 7 and 18 years with  
45 mental health problems ranging from behavioural problems to cases with complex PTSD or  
46 severe OCD with comorbid conditions. The majority of therapists were qualified child and  
47 adolescent psychiatrists (n = 28), and the remaining were psychologists (n = 10), psychological  
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3 counsellors (n = 9), psychiatric nurses (n = 3) and a social worker (n = 1). The therapists were  
4 asked to listen to a full audio (sometimes video) recorded session and then to rate the session  
5 on a Google-survey form containing both the CTS and CBTS-CYP. The sessions rated for the  
6 purpose of this study were between the 4<sup>th</sup> and 9<sup>th</sup> sessions of therapy.  
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### 10 11 12 **The Cognitive Behaviour Therapy Scale for Children and Young People (CBTS-CYP)**

13 CBTS-CYP was based upon the Cognitive Therapy Scale- Revised (CTS-R), which is a widely used  
14 assessment tool that provides a comprehensive overview of the generic and CBT specific skills  
15 required to competently practice CBT with adults (Fairburn & Cooper, 2011). CBTS-CYP  
16 contains all items included in the CTS-R, however these items were modified where needed  
17 and items added to appropriately reflect the use of CBT with children and young people.  
18 Similar to the CTS-R, a 7-point Likert scale was adopted for use in the CBTS-CYP and the same  
19 thresholds for assessing competency i.e., a minimum score of 2 on each item and at least 50%  
20 on the total score were preserved (Stallard, 2020). As the CBTS-CYP includes items to evaluate  
21 both verbal and non-verbal behaviours, similar to the CTS-R, it can be used to assess both  
22 audio and video recordings of clinical sessions.  
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32 The item *home assignments* were initially subsumed within the discovery competence. The  
33 first version of the CBTS-CYP, therefore, consisted of 14 items. However, this item was then  
34 separated and identified as a discrete competency, like the CTS-R, in its current iteration.  
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38 The latest version of the CBTS-CYP contains a total of 15 items, the first 7 assess *process*  
39 defined by the acronym PRECISE, and the remaining 8 items assess *methods* defined by  
40 ABCDEFGH. The acronym PRECISE stands for the initial letters of the following items:  
41 Partnership based on collaborative empiricism; Right developmental level consistent with the  
42 young person's cognitive, linguistic, memory and perspective taking abilities; Empathic warm,  
43 caring and respectful relationship; Creatively and flexibly conveying CBT concepts;  
44 Investigation and self-discovery; Self-efficacy built upon the strengths, skills and ideas of the  
45 young people; Enjoyable and engaging session. ABCDEFGH is referred to as the A, B, Cs of CBT  
46 and stands for the initial letters of the following items: Assessment that includes establishing  
47 clear goals and appropriate use of diaries, questionnaires, and rating scales; Behavioural  
48 techniques such as graded exposure, behavioural activation and activity scheduling; Cognitive  
49 techniques to identify cognitions, promoting cognitive awareness, challenge, reframe or to  
50 develop mindfulness, acceptance and compassion; Discovery facilitated by techniques such as  
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3 the Socratic dialogue, behavioural experiments and prediction testing; Emotional techniques  
4 to identify and manage strong, unpleasant emotions; Formulation which highlights the  
5 relationships between events, cognitions, emotions, physiological responses and behaviour;  
6  
7 General skills to effectively manage sessions such as agenda setting, session planning and  
8 managing challenging behaviour; Home assignments with clear goals and purpose. Each item  
9 is rated on a 7-point Likert scale (scored 0-6) assessing degree of competence giving a total  
10 score of 90.  
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### 18 **The Cognitive Therapy Rating Scale (CTS)**

19 Developed by Young and Beck (Young & Beck, 1980), the CTS is a widely used observer-rated  
20 measure of CBT treatment fidelity (Goldberg et al., 2020). It was originally developed to  
21 contain two theorized factors in 11 items: 'general therapeutic skills, which consist of six items  
22 (Agenda, Feedback, Understanding/Empathic skills, Interpersonal effectiveness,  
23 Collaboration, Pacing/use of time) and 'cognitive-behavioural skills' consisting of five items  
24 (Guided discovery/Empiricism, Focusing on key cognitions or behaviours, Strategy for  
25 change/conceptualization, Application of Cognitive behavioural techniques, and Homework).  
26 Each item is rated on a 7-point Likert scale (scored 0-6) to reflect the degree of competence  
27 giving a total score of 66. The CTS is the most commonly used scale for measuring CBT  
28 competence and fidelity, in training programs, clinical trials, for formal certification and in  
29 studies assessing effective CBT delivery (Affrunti & Creed, 2019).  
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40 The CTS-R (Blackburn et al., 2001) was designed as a revision of the CTS to improve its  
41 psychometric properties. The CTS-R presented coding on a scale in which the therapist's  
42 attitudes were evaluated in a range between 0, which is considered inadequate, and 6 points,  
43 which corresponds to excellent performance. The original CTS had a similar 7-point Likert  
44 scoring, but only explanations were provided for items corresponding to 0, 2, 4, and 6 points.  
45 Since the 3 in-between response options were not defined, the CTS-R filled this gap and  
46 provided a consistent grading pattern for all items. In addition, the evaluation of "focusing on  
47 key behaviours and cognitions", which is evaluated over a single item in CTS, is divided into  
48 "eliciting behaviours" and "eliciting cognitions". The expression 'Elicitation of appropriate  
49 emotional expression' has also been added to evaluate emotional processing as an  
50 independent item.  
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3 A study in which the Cognitive Therapy Rating Scale (CTS) and its revision, the Revised  
4 Cognitive Therapy Scale (CTS-R) were used comparatively in a sample with depression, showed  
5 that both CTS and CTS-R gave similar results in terms of internal reliability and interrater  
6 reliability. It has been reported that both can predict a significant decrease in depression  
7 symptoms at the end of therapy (Kazantzis et al., 2018).  
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### 13 14 **Translation of the CBTS-CYP into Turkish**

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16 Firstly, the translation of the scale from English to Turkish was made by an independent expert  
17 in the field of child and adolescent psychiatry and then evaluated by the research team. The  
18 Turkish translation of the scale was then back translated into English by a professional  
19 translator, who had no specific expertise in the field of mental health. The back-translated  
20 scale was examined by a bilingual English-speaking researcher with expertise in CBT for its  
21 integrity and appropriateness. The scale was piloted, suggestions about the comprehensibility  
22 of the items obtained and the final version of the translation was approved by the team. The  
23 main issue with the translation was about how to preserve the PRECISE and ABCDEFGH  
24 acronyms. As we could not come up with Turkish equivalent of these acronyms, we decided  
25 to use them as they were and encouraged the therapists to memorize them before the  
26 theoretical CBT training commenced. We then provided a brief re-training for both CTS and  
27 CBTS-CYP at the beginning of supervision meetings.  
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### 40 **Data Evaluation and Analysis**

41 The data obtained were statistically analysed using the SPSS 24.0 (Statistical Package of Social  
42 Science) package programme. Parallel form correlations for equivalence, inter-rater reliability  
43 for stability, and Cronbach's alpha value for internal consistency / homogeneity were  
44 conducted for reliability analysis. Finally, language validity and construct validity analyses  
45 were made.  
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## 52 **RESULTS**

### 53 54 55 **Descriptive Statistics**

56 The ages of 36 clients, whose cases were presented for supervision were between 8 and 18  
57 (14.10 ± 2.54) years. 6 (17%) of the cases were male and 30 (83%) were female. The primary  
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3 diagnoses of the presented cases were depression (5), obsessive-compulsive disorder (13),  
4 social anxiety disorder (5), generalized anxiety disorder (4), specific phobia (4), post-traumatic  
5 stress disorder (2), eating disorder (1), agoraphobia (1) and separation anxiety disorder (1).  
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### 10 **Inter-rater reliability**

11 For each case (n=36), a number of therapists ranging from 32 to 51 evaluated the audio or  
12 video recording. Thus, the inter-rater reliability of the CBTS-CYP for each interview was  
13 obtained with the Intraclass correlations coefficient (ICC) values. According to Shrout & Fleiss  
14 (1979), in the case of several raters assessing the same target, a two-way mixed effects  
15 approach ICC with absolute agreement would be an appropriate approach (Shrout & Fleiss,  
16 1979). The results showed that the intraclass correlation coefficients ranged between 0.698  
17 and 0.968 for the process items; 0.702-0.947 for the method items and between 0.994-1,000  
18 for the total form. Thus, the results demonstrated that the intraclass correlation values were  
19 good (0.60-0.74) or excellent (0.74 and above). Table 1 shows the ICC values of 5 interviews  
20 randomly selected from 36 sessions through the analysis program.  
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32 *INSERT TABLE 1 ABOUT HERE*  
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### 36 **Examination of correlations between CBTS-CYP and CTS**

37 For all evaluations, correlations between CBTS-CYP total and subscale scores and CTS total  
38 scores were examined. Pearson's correlation coefficient between the CBTS-CYP and CTS total  
39 scores was 0.935 ( $p < 0.001$ ). Correlation coefficients between the CBTS-CYP process and  
40 method sub-dimensions and the CTS total score were respectively 0.889 and 0.921 ( $p < 0.001$ ).  
41 In addition, the correlations of each CBTS-CYP item and CTS items were examined, and all  
42 relationships were found to be significant. Table 2 presents the results.  
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### 55 **Item Analysis and Internal Consistency Analysis**

56 Item analysis was used to evaluate the quality and distinctiveness of the scale items. Item-  
57 total correlation values corrected according to item analysis results ranged from .748 to .822  
58 (Table 3). The internal consistency of the scale was tested using the Cronbach alpha value. The  
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3 total -scale Cronbach alpha value was found to be .94. The Cronbach alpha value for the  
4 process sub-dimension was .93, and for the method sub-dimension is .94.  
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### 10 11 **Sensitivity, Specificity, Positive Predictive Value (PPV), Negative Predictive Value (NPV) and** 12 **Cut-off Point** 13

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16 The CTS cut-off score of 40 or more points was used to determine the cut-off score of CBTS-  
17 CYP. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV),  
18 and cut-off point for CBTS-CYP were calculated using the ROC curve. ROC analysis results  
19 under the curve were found to be significant with a value of .968. The value where the  
20 sensitivity and specificity values were closest to each other and to 100% was chosen as the  
21 place where the cut-off score was determined. The cut-off point obtained when the sensitivity  
22 reached 90.73% and specificity 90.73% was found to be 55. In this context, considering that  
23 the total score of CBTS-CYP is 90, the specificity value drops to 31.44%, when the cut off is  
24 taken as 45. The results are shown in table 4. The ROC curve is as given in Figure 1.  
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34 *INSERT TABLE 4 ABOUT HERE*  
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### 40 **Discriminative ability** 41

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43 Ratings provided by each rater based on both CBTS-CYP and CTS are shown comparatively in  
44 the Supplementary Table. For both rating scales, a score of 2 or less on any item or receiving  
45 less than a total score of 40 points for the CTS and 55 points for the CBTS-CYP was considered  
46 a "failure". Findings are displayed in the Supplementary Table.  
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51 Using the total score criteria, 17 recordings met the failure criteria; 15 (scored less than 55)  
52 on the CBTS-CYP and 15 (less than 40) on the CTS. Of these, 13/17 (76%) were identified by  
53 both the CTS and the CBTS-CYP. Using the single item criteria (score less than 2), 12 recording  
54 were failed, with 11 (92%) being identified by both measures. Of the 18 cases who failed on  
55 either criterion, 16 (89%) were identified by both the CBTS-CYP and CTS  
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## DISCUSSION

This is the first study to examine the psychometric properties of the CBTS-CYP as a child and adolescent CBT-oriented competence and fidelity assessment tool in Turkish language and the first reliability and factor structure analysis of the CBTS-CYP in a different setting and culture. The results presented here are consistent with the previous study (Stallard et al., 2014) and show that the CBTS-CYP (its translation into Turkish is abbreviated as ÇETPÖ) has high levels of interrater reliability and correlations with the well-established CTS (Affrunti & Creed, 2019; Borkovec, Newman, Pincus, & Lytle, 2002; Young & Beck, 1980). It has good discriminative ability that is comparable with the CTS. Finally, it has good acceptability with the raters liking the scale and feeling it was comprehensive and easy to use with limited training.

Determining the criteria for demonstrating competence is complex and will continue to be debated. It is further compounded by inconsistent scorings among different assessors (James, Blackburn, & Reichelt, 2001; Keen & Freeston, 2008; Stallard et al., 2014). The usual dual criteria used for demonstrating competence on the CTR and the CTS-R are a minimum total score and single item thresholds. Our findings demonstrate that when the CBTS-CYP cut-off score of 55 was adopted, (equivalent to 40/66 on the CTS), the sensitivity of the total scale was 90% and the specificity was 90%. In terms of pass criteria, both scales identified 13/17 (76%) who failed the total score criteria, 11/12 (92%) who failed the single item criteria and 16/18 (89%) who failed either criterion.

The optimal CBTS-CYP cut-off of 55 found in this study is higher than that previously reported (i.e., 42) when compared against the CTS-R. Whilst this paper has evaluated the updated version of the CBTS-CYP with one additional item the overall criteria to determine competence by the CTS-R and CTS differ. The CTS-R requires a total score equivalent to 50% or more (i.e., 36/72) whilst the CTS requires a score of 60% or more (i.e., 40/66). Although the total score cut-offs of the CBTS-CYP are consistent with those recommended by the comparison scales it nonetheless raises the question of what level is required to demonstrate competence. In this study, 3 recordings met the total score pass criteria but failed on one or more single item.

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3 Given that the aim of the CBTS-CYP is to assess competence across the range of skills required  
4 to undertake CBT with children and young people the use of a dual criteria approach appears  
5 justified.  
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8 Although these rating scales are often used to evaluate a single session, especially when used  
9 for accreditation of the therapist by an institution, it could be problematic to assess  
10 multidimensional constructs such as competence and adherence in a single session recording.  
11 For example, a single session may not be sufficient to evaluate whether a range of cognitive  
12 and behavioural techniques including interventions such as behaviour experiments and  
13 exposure were used correctly at the right time.  
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16 From this point of view, it may be useful to determine more clearly the application areas  
17 where these scales would provide a healthier evaluation. In addition to evaluating a single  
18 session recording, written material including additional information about the therapy  
19 process, case summary, case conceptualization, therapy goals, techniques used in sessions  
20 other than the current session, therapy planning, etc. should also be included in the  
21 competence assessment. These scales should be the tool of a process in which competence  
22 assessment is done on cross-sectional as well as dimensional planes.  
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34 The P in CETPÖ, the Turkish equivalent of CBTS-CYP, represents the first letter of the word  
35 'performance' (performance is translated into Turkish as "Performans"). It is also debatable  
36 whether what these scales really assess is the *performance* demonstrated in the cross-  
37 sectional assessment of a single session, or the therapist's *competence* as a CBT therapist more  
38 generally. Of course, if competence refers to a dimensional and longitudinal rather than cross-  
39 sectional assessment, the minimum criterion to be considered competent must be something  
40 more than exceeding a cut-off score from these scales. Roth and Pilling (2008) report that the  
41 rather comprehensive framework they have drawn up with an evidence-based methodology  
42 cannot be used in its current form for a systematic assessment of CBT competences (A. D. Roth  
43 & Pilling, 2008). On the other hand, the same authors suggested that the 25-item Cognitive  
44 Therapy Adjustment and Competence Scale (CTACS, (Barber, Liese, & Abrams, 2003)) and the  
45 14-item Cognitive Therapy Scale Revised (CTS-R, (Blackburn et al., 2001)) that only include  
46 subsets of items proposed in their detailed and voluminous framework could effectively and  
47 reliably deliver an assessment of competence. Similarly, for the purpose of assessing the CBT  
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3 therapist competence, Muse and McManus (2013) placed the measures that rate actual  
4 therapy sessions at the highest level of clinical skills hierarchy (Muse & McManus, 2013).

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6 Another important question to be answered is whether CBTS-CYP (CETPÖ) and CTS (or CTS-R)  
7 really measure the same competences. Stallard et al.'s (2014) study, in which the CBTS-CYP  
8 scale was developed, showed that some items in CBTS-CYP do not have a direct equivalent in  
9 CTS-R (Stallard et al., 2014). Items such as (R) Right developmental level, Creativity (C), Self-  
10 efficacy (S) and Enjoyable and engaging (E) included in the PRECISE acronym, which represents  
11 the 'process' items of the CBTS-CYP framework, have no direct counterparts in the CTS-R.  
12 Similarly, Assessment and goals (A) in the ABCDEFGH formula, which represents the 'Method'  
13 items of the CBTS-CYP framework, does not have a direct equivalent in CTS or CTS-R. However,  
14 all competence items in the CTS-R or CTS are also available in CBTS-CYP, and the correlations  
15 between the two scales were found to be high on the basis of both the item-level and the total  
16 scale score. Beyond these statistical data, when CBTS-CYP is used to measure the competence  
17 of therapy with children and adolescents, it not only covers all areas evaluated by CTS, but  
18 also adds depth by providing an evaluation from a developmental perspective'

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32 On another note, in competence assessments made by listening to audio recordings, it should  
33 be taken into account that there may be potential difficulties with the full assessment of some  
34 of the competence items. For example, the criterion of 'appropriately responding to the child's  
35 and carers' verbal and non-verbal expressions and emotional responses such as distress,  
36 excitement or anxiety' suggested in the CBTS-CYP for the evaluation of 'Empathy' may not be  
37 scored ideally. Similarly, it may not be observed how the therapist uses a range of non-verbal  
38 techniques for the assessment of 'Creativity'.

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47 Whilst this study highlights the robustness of the CBTS-CYP to assess competence in  
48 undertaking CBT with children and adolescents in Turkey it does have a number of limitations.  
49 Firstly, the number of evaluators (n=32-51) and recordings assessed (n=36) are relatively  
50 small. Secondly, the evaluation was undertaken within one implementation program and as  
51 such further studies are required to investigate whether these findings generalize to other  
52 settings. Thirdly, although recordings included children aged 8-18 years, the majority were  
53 teenagers with few under the age of 11. The use of CBT with younger children requires more  
54 creativity, family involvement and adaptation to ensure that it is developmentally  
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3 appropriate. The appropriateness of the CBTS-CYP to assess CBT with this younger age group  
4 needs to be determined.  
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7 In conclusion, this study has added to the literature regarding the psychometric robustness of  
8 the CBTS-CYP to assess competence in undertaking CBT with children and young people. The  
9 CBTS-CYP is comparable to established “gold standard” measures widely used to assess  
10 competence with adults. Importantly, the Turkish translation of the CBTS-CYP provides a  
11 useful tool for evaluating competence where child and adolescent expertise is limited.  
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### 18 **Ethical statements**

19 The authors confirm that they have abided by the Ethical Principles of Psychologists and Code  
20 of Conduct as set out by the BABCP and BPS. The study was approved by the Istanbul  
21 Medeniyet University Ethics Committee.  
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### 27 **REFERENCES**

- 28 Affrunti, N. W., & Creed, T. A. (2019). The Factor Structure of the Cognitive Therapy Rating  
29 Scale (CTRS) in a Sample of Community Mental Health Clinicians. *Cognitive Therapy  
30 and Research, 43*(3), 642-655.  
31  
32 Barber, J. P., Liese, B. S., & Abrams, M. J. (2003). Development of the cognitive therapy  
33 adherence and competence scale. *Psychotherapy research, 13*(2), 205-221.  
34  
35 Blackburn, I.-M., James, I. A., Milne, D. L., Baker, C., Standart, S., Garland, A., & Reichelt, F. K.  
36 (2001). The revised cognitive therapy scale (CTS-R): psychometric properties.  
37 *Behavioural and cognitive psychotherapy, 29*(4), 431-446.  
38  
39 Borkovec, T. D., Newman, M. G., Pincus, A. L., & Lytle, R. (2002). A component analysis of  
40 cognitive-behavioral therapy for generalized anxiety disorder and the role of  
41 interpersonal problems. *Journal of consulting and clinical psychology, 70*(2), 288.  
42  
43 Butler, A. C., Chapman, J. E., Forman, E. M., & Beck, A. T. (2006). The empirical status of  
44 cognitive-behavioral therapy: a review of meta-analyses. *Clinical psychology review,  
45 26*(1), 17-31.  
46  
47 Fairburn, C. G., & Cooper, Z. (2011). Therapist competence, therapy quality, and therapist  
48 training. *Behaviour Research and Therapy, 49*(6-7), 373-378.  
49  
50 Friedberg, R. (2014). Training matters: The importance of delivering authentic CBT with youth.  
51 *J Psychol Clin Psychiatry, 1*(7), 47.  
52  
53  
54  
55  
56  
57  
58  
59  
60

- 1  
2  
3 Fuggle, P., Dunsmuir, S., & Curry, V. (2012). *CBT with children, young people and families*: Sage.
- 4  
5 Goldberg, S. B., Baldwin, S. A., Merced, K., Caperton, D. D., Imel, Z. E., Atkins, D. C., & Creed,  
6  
7 T. (2020). The structure of competence: Evaluating the factor structure of the Cognitive  
8  
9 Therapy Rating Scale. *Behavior therapy*, 51(1), 113-122.
- 10 Hofmann, S. G., Asnaani, A., Vonk, I. J., Sawyer, A. T., & Fang, A. (2012). The efficacy of  
11  
12 cognitive behavioral therapy: A review of meta-analyses. *Cognitive Therapy and*  
13  
14 *Research*, 36(5), 427-440.
- 15  
16 James, I., Blackburn, I., & Reichelt, F. (2001). Manual of the revised cognitive therapy scale.  
17  
18 *Unpublished manuscript, Newcastle Cognitive and Behavioural Therapies Centre,*  
19  
20 *Newcastle, UK.*
- 21  
22 Kazantzis, N., Clayton, X., Cronin, T., Farchione, D., Limburg, K., & Dobson, K. (2018). The  
23  
24 cognitive therapy scale and cognitive therapy scale-revised as measures of therapist  
25  
26 competence in cognitive behavior therapy for depression: Relations with short and  
27  
28 long term outcome. *Cognitive Therapy and Research*, 42(4), 385-397.
- 29  
30 Keen, A. J., & Freeston, M. H. (2008). Assessing competence in cognitive-behavioural therapy.  
31  
32 *The British Journal of Psychiatry*, 193(1), 60-64.
- 33  
34 McGlinchey, J. B., & Dobson, K. S. (2003). Treatment integrity concerns in cognitive therapy  
35  
36 for depression. *Journal of Cognitive Psychotherapy*, 17(4), 299-318.
- 37  
38 Miller, G. E. (1990). The assessment of clinical skills/competence/performance. *Academic*  
39  
40 *medicine*, 65(9), S63-67.
- 41  
42 Muse, K., & McManus, F. (2013). A systematic review of methods for assessing competence in  
43  
44 cognitive-behavioural therapy. *Clinical psychology review*, 33(3), 484-499.
- 45  
46 Roth, A., & Pilling, S. (2007). The competences required to deliver effective cognitive and  
47  
48 behavioural therapy for people with depression and with anxiety disorders. *London:*  
49  
50 *Department of Health.*
- 51  
52 Roth, A. D., & Pilling, S. (2008). Using an evidence-based methodology to identify the  
53  
54 competences required to deliver effective cognitive and behavioural therapy for  
55  
56 depression and anxiety disorders. *Behavioural and cognitive psychotherapy*, 36(2),  
57  
58 129-147.
- 59  
60 Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: uses in assessing rater reliability.  
*Psychological bulletin*, 86(2), 420.

1  
2  
3 Stallard, P. (2020). *A Clinician's Guide to CBT for Children to Young Adults: A Companion to*  
4  
5 *Think Good, Feel Good and Thinking Good, Feeling Better*: John Wiley & Sons.

6  
7 Stallard, P., Myles, P., & Branson, A. (2014). The cognitive behaviour therapy scale for children  
8  
9 and young people (CBTS-CYP): Development and psychometric properties. *Behavioural*  
10  
11 *and cognitive psychotherapy*, 42(3), 269-282.

12  
13 Young, J., & Beck, A. T. (1980). Cognitive therapy scale: Rating manual. *Unpublished*  
14  
15 *manuscript*, 36.

16  
17  
18  
19  
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For Peer Review

**Table 1: ICC values for a sample of sessions**

	n	Process items ICC (95%CI)	P	Method items ICC (95%CI)	p	Total ICC (95%CI)	p
Session 2	33	0.815 (0.543-0.962)	0.001	0.777 (0.478-0.947)	0.001	0.998 (0.996-0.999)	0.001
Session 14	39	0.895 (0.742-0.979)	0.001	0.917 (0.805-0.980)	0.001	0.996 (0.994-0.998)	0.001
Session 22	47	0.814 (0.544-0.962)	0.001	0.702 (0.304-0.929)	0.001	0.994 (0.990-0.997)	0.001
Session 24	49	0.698 (0.759-0.938)	0.001	0.947 (0.877-0.987)	0.001	0.999 (0.998-1.00)	0.001
Session 35	51	0.968 (0.922-0.993)	0.001	0.857 (0.667-0.966)	0.001	0.998 (0.996-0.999)	0.001

**Table 2: Correlations between CBTS-CYP and equivalent CTS items**

CBTS-CYP	CTS	Correlation Coefficient	Significance ( <i>p</i> )
General Skills (G)	Agenda setting and adherence	0.770	0.001
Investigation (I)	Feedback	0.632	0.001
Partnership (P)	Collaboration	0.746	0.001
General Skills (G)	Pacing and Efficient Use of Time	0.631	0.001
Empathy (E)	Interpersonal Effectiveness	0.749	0.001
Cognitive techniques (C)	Focusing on Key Cognitions or Behaviours	0.738	0.001
Behavioural techniques (B)	Application of Cognitive-Behavioural Techniques	0.732	0.001
Discovery experiments (D)	Guided Discovery	0.768	0.001
Formulation (F)	Strategy for Change	0.713	0.001
Cognitive techniques (C)	Strategy for Change	0.704	0.001
Behavioural techniques (B)	Strategy for Change	0.711	0.001
Emotional techniques (E)	Strategy for Change	0.753	0.001
Homework setting (H)	Homework	0.830	0.001

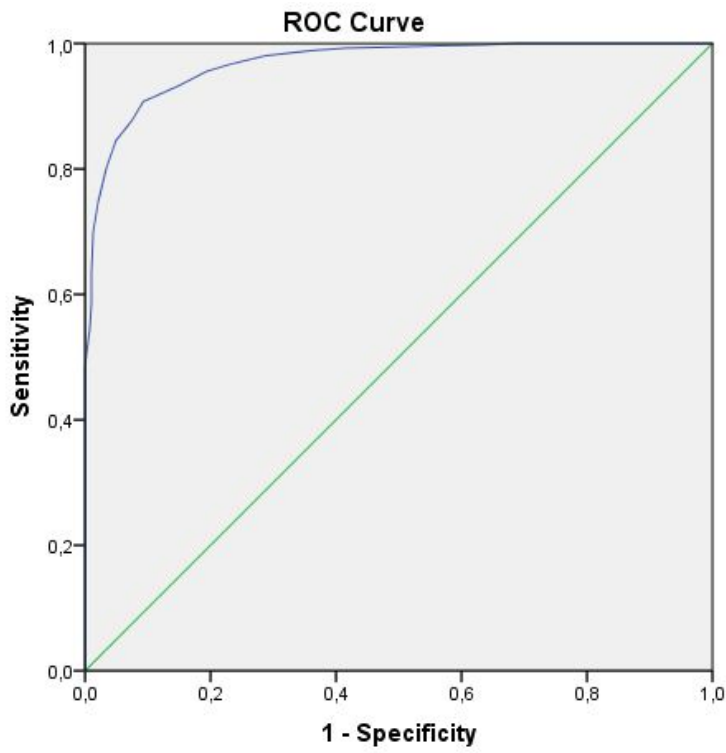
**Table 3: Item Analysis Results**

ITEMS	Mean	SD	Corrected item total correlation coefficient	Cronbach Alpha if item deleted
1.Partnership (P)	4.14	.970	.786	.964
2.Right Developmental Level (R)	4.06	.983	.748	.964
3.Empathy (E)	4.21	1.015	.767	.964
4.Creativity (C)	3.81	.996	.783	.964
5.Investigation (I)	3.91	.989	.817	.963
6.Self-Efficacy (S)	3.89	.955	.822	.963
7.Enjoyable and Engaging (E)	3.73	1.030	.817	.963
A. Assessment (A)	4.02	.970	.807	.963
B. Behavioural Techniques (B)	3.92	1.003	.809	.963
C. Cognitive Techniques (C)	3.89	.956	.805	.963
D. Discovery (D)	3.82	.965	.795	.963
E. Emotional Techniques (E)	3.78	.936	.788	.964
F. Formulation (F)	4.00	1.058	.809	.963
G. General Skills (G)	4.05	1.056	.790	.964
H. Homework	4.00	1.078	.772	.964

**Table 4: CBTS-CYP Total ROC Analysis**

Cut-off point	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Youden's index	AUC	Metric Score
45	100%	31.44%	75.75%	100%	0.31443	0.968	1.31
46	99.76%	36.86%	77.19%	98.62%	0.36615	0.968	1.37
47	99.64%	43.56%	79.08%	98.26%	0.43196	0.968	1.43
48	99.4%	52.06%	81.62%	97.58%	0.51460	0.968	1.51
49	99.28%	57.99%	83.5%	97.4%	0.57268	0.968	1.57
50	98.92%	63.4%	85.27%	96.47%	0.62319	0.968	1.62
51	98.07%	71.13%	87.92%	94.52%	0.69209	0.968	1.69
52	96.63%	77.06%	90.02%	91.44%	0.73692	0.968	1.74
53	95.55%	80.67%	91.37%	89.43%	0.76218	0.968	1.76
54	93.26%	85.05%	93.04%	85.49%	0.78313	0.968	1.78
55	90.73%	90.72%	95.44%	82.05%	0.81456	0.968	1.81
56	87.73%	92.53%	96.17%	77.87%	0.80251	0.968	1.80
57	84.48%	95.1%	97.36%	74.1%	0.79580	0.968	1.80
58	80.02%	96.65%	98.08%	69.32%	0.76674	0.968	1.77
59	74.61%	97.94%	98.73%	64.3%	0.72547	0.968	1.73
60	69.92%	98.71%	99.15%	60.51%	0.68627	0.968	1.69

Figure 1: ROC Curve for CBTS-CYP



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**Supplementary Table: Comparison of raters' scores**

Rater	Total CBTS-CYP score	Total CTS score	CBTS-CYP Items $\leq 2$ points	CTS items $\leq 2$ points
1	58	45	0	0
2	46	33	0	0
3	68	49	0	0
4	46	33	1	2
5	52	38	0	0
6	63	46	0	0
7	64	45	0	0
8	47	31	1	2
9	48	40	3	2
10	60	46	0	0
11	47	36	1	1
12	42	37	4	1
13	61	43	0	0
14	35	23	10	9
15	69	52	0	0
16	66	48	0	0
17	57	39	0	0
18	46	37	1	1
19	50	40	0	0
20	78	62	0	0
21	65	42	0	0
22	34	26	10	7
23	58	44	3	1
24	64	47	0	0
25	62	44	0	0
26	68	48	0	0
27	68	51	0	0
28	47	36	1	0
29	58	46	0	0
30	62	45	0	0
31	49	37	0	0
32	55	36	1	2
33	45	33	5	4
34	51	37	0	0
35	60	42	0	0