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Psychometric properties of the Turkish version of the Thought-Action Fusion-Child Version (TAFIC)

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Abstract

Background: The concept of thought-action fusion has long been recognized as a cognitive vulnerability factor for psyhopathology that given its clinical relevance and importance reliable assessment of this phenomenon seems to be essential. The aim of this study was to investigate the psychometric properties of the Thought-Action Fusion Inventory for Children (TAFIC) among Turkish children and adolescents.
Methods: Five hundred and ninety-one subjects (mean age=14.16±2.08 years) participated in the study. Voluntered subjects completed the TAFIC, Magical Ideation Scale (MIS), Child Depression Inventory (CDI), Screen for Child Anxiety Related Emotional Disorders Revised-Child Self-Report (SCARED-R-CV), and Metacognitions Questionnaire for Children (MCQ-C).
Results: Confirmatory factor analysis revealed the original four-factor structure excellently fit the data on the Turkish version of the TAFIC. Internal reliability of the instrument was acceptable to excellent, with Kuder-Richardson coefficients ranging from 0.70 to 0.89. The convergent validity of the TAFIC was adequate, with significant correlation coefficients with magical ideation, meta-cognitions, depression, and anxiety related emotional problems.
Conclusions: Based on these findings, we concluded that the Turkish version of the TAFIC has promising psychometric properties in assessing thought-action fusion among children and adolescents.

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KEYWORDS: thought-action fusion developmental psychopathology, meta-cognitons, anxiety, depression, reliability, factor analysis

INTRODUCTION

Over three decades, thought-action fusion (TAF) has been suggested as an important cognitive risk factor in the formation and persistence of psychopathology, in particular obsessive-compulsive disorder (OCD) and anxiety disorders [1]. The concept of TAF was considered as similar in meaning or highly overlap with, at best, the construct of magical thinking in the past which was described as a cognitive bias encompassing ineluctable relationships between one's thoughts and actions [2]. An important nuance is that TAF increases a sense of one's responsibility and also can be conceived of pathognomonic in its own as obsessions (e.g. [3]). For effective interventions in the treatment of psychopathology, in particular OCD, understanding the role of TAF seems to be of monumental importance [1,3].

The scope of the conceptualization of TAF encompasses two main aspects: *TAF moral and TAF likelihood*. *TAF moral* refers to appraisals assuming intrusions are the same with, if not similar to, performing an action. *TAF likelihood* refers to one's beliefs that having an unwanted thought increases the likelihood of occurrence of its content [4]. In addition, Amir et al. [5] put forward two additional dimensions TAF positive and TAF negative. Expanding on the customary notion of the TAF, one's beliefs about that anticipations whether they include favorable or unfavorable consequences increase the likelihood of their occurrence [6].

Significant associations between obsessional intrusions and TAF were identified [7,8]. Although TAF was thought to be an antecedent of OCD symptoms [7,8], substantial dose-response relationships between endorsement of TAF beliefs and anxiety symptoms [7,9], as well as depressive symptomatology depression [10, 11] were observed. Nevertheless, relevant studies in children and adolescents

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lag behind research among adult samples [6,7,12-15]. Consistent with adult studies, strong endorsement of TAF beliefs were significant correlate of obsessive-compulsive symptoms, anxiety disorders and depression [7,14].

Throughout the development of abstract cognition, differentiation process of self and others evolves gradually [6,16]. TAF is a developmental construct closely related with magical thinking [11,17]. In child development, magical thinking could be seen as a normal tendency [1,2]. However, opposite to magical thinking, little work concerning TAF as a developmental phenomena has been done [6]. TAF is regarded as an important aspect of magical thinking that probably leads to OCD symptoms via elevating distress levels or inducing neutralization [1]. As a meta-cognitive aptitude and knowledge, TAF probably might not emerge until children gain ability to think about their thinking which is a an integral part of formal thinking and sometimes this may prolong to puberty [1]. On the other hand, development of meta-cognitive aptitudes and knowledge accompanied by emotional regulation problems may alert a risky developmental period in adolescence.

Given the pivotal role of TAF in psychopathology, measuring TAF using psychometric instruments with high validity and reliability has potential to early diagnosis of psychopathology and fine-tune the treatment regime in children and adolescents. A lack of instrument to assess the psychological construct of TAF among Turkish children and adolescents is evident. The aim of this study was to evaluate psychometric properties of the Thought-Action Fusion Inventory for Children (TAFIC) among Turkish children and adolescents. In addition, we also investigated the validity and reliability of the Turkish version using confirmatory factor analysis and correlations of scores on the TAFIC with anxiety and depression symptoms as well as relevant constructs of meta-cognitions and magical thinking.

MATERIAL AND METHODS

2.1 Participants and procedure

Seven hundred sixteen subjects participated in the study. One hundred twenty-five children who responded inconsistently to items 3 and 17 were discarded from the analyses. These items were exactly same and designed for exclusion of inconsistent responses. A final data set consisting of five hundred ninety-one cases were subjected to analyses. The mean age of the respondents was 14.24 (SD±2.08) and 51.3% of the sample were female (n=303).

For this study, Dr. David W. Evans who developed the scale, gave written permission. The TAFIC was translated from English to Turkish by two academicians fluent in English. Two child psychiatrists revised the translated form of the TAFIC for cultural correspondence. The revised items were then back-translated from Turkish to English. As there were no major differences in meaning, the final questionnaire of the Turkish version of the TAFIC was administered to participants.

Volunteers were recruited from schools located in Gebze district of Kocaeli, Turkey. An informed consent letter and a explanation form were sent to the parents via the teachers. As the signed informed consent of parent was delivered, the test battery package including the TAFIC, MIS, CDI, MCQ-C, and the SCARED-R-CV was administered by teachers.

All parents, teachers and children were briefly informed about this study and written informed consent was taken from parents. The study procedure was granted approval from the local ethical committee (KOÜ KAEK 2016/112; date: 22/07/2016).

2.2 Instruments

2.2.1 Thought-Action Fusion Inventory for Children (TAFIC)

The TAFIC has 19 yes/no items designed to assess thought-action fusion among clinical and non-clinical youth samples. TAFIC contains two exactly the same items (3 and 17) which was utilized for exclusion of inconsistent answers. The four subscales of the TAFIC are: TAF-Likelihood-Other: Negative Events (TAFNEG), TAF-Likelihood-Other: Positive Events (TAFPOS), TAF-Likelihood – Self (TAFSELF), and TAF-Harm Avoidance (TAFHARM) [6].

2.2.2 Magical Ideation Scale (MIS)

The Chapman Magical Ideation scale, a 30-item scale which designed as yes/no inventory, [18] assess the presence of unusual beliefs and experiences. The Turkish Version of the Magical Ideation Scale had excellent internal consistency coefficients as α=0.80 for female students and α=0.76 for male students [19].

2.2.3 Child Depression Inventory (CDI)

The CDI, likert-type self-report questionnaire measuring depressive symptoms in children [20]. The Turkish version of the CDI was validated by Öy et al. [21] among Turkish children. The Turkish version of the instrument was demonstrated to have excellent psychometric properties, with an internal consistency of α = 0.77, and two-week test–retest reliability of r = .80.

2.2.4 Screen for Child Anxiety Related Emotional Disorders Revised-Child Self-Report (SCARED-R-CV)

SCARED-R-CV consists of 41 self-report items, designed to screen anxiety symptoms among children [22]. The Turkish version of the SCARED-R-CV had good validity and reliability in Turkish children [23].

2.2.5 Metacognitions Questionnaire for Children (MCQ-C)

The MCQ-C is a 24-item self-report questionnaire [24,25]. The Turkish version of the MCQ-C revealed good reliability, with a Cronbach's alpha of α = .73 and a three-week test-retest reliability of r = .82 [26].

2.3 Statistical Analysis

Confirmatory factor analysis (CFA) was run to investigate the factor structure of the Turkish version of the TAFIC. All

statistical analyses were conducted using Mplus software (Version 4.01). TAFIC items were treated as binary data, using a tetrachoric correlation matrix. Weighted least squares estimations with a mean – and variance-adjusted chi-square (WLSMV) were used to estimate the models, which is preferred for estimating binary data [27].

The goodness of fit indices were obtained for the specified model: the comparative fit index (CFI), Tucker Lewis index (TLI), and root mean square error of approximation (RMSEA), and weighted root mean square residual (WRMR). According to the guideline [28], a CFA model fitting well (or adequate) is indicated by CFI and TLI ≥ 0.95 (0.90-0.94) and RMSEA ≤ 0.06 (0.07-0.08). A value less than 0.90 for WRMR, a newly proposed model fit index by Yu [29], indicates a good fit. We computed Kuder-Richardson and intra-correlations between two applications with a two-week interval for internal reliability. Traditional internal consistency coefficients underestimate the reliability of congeneric measures [30,31]. Therefore, we obtained Raykov's composite reliability coefficients for internal consistency as well [32]. The statistical significance threshold was set at $p<0.05$.

RESULTS

Using CFA, we tested the adequacy of the original four-factor structure suggested in the initial validation study. The specified four-factor model provided an excellent fit to the data with a x2 (129) = 146.343 $p=0.141$, CFI was 0.997, TLI was 0.997, and RMSEA was 0.015 (95% CI=0.001-0.026, $p=1.00$), and WRMR was 0.765. All standardized factor loadings were statistically significant. The four-factor model explained 65.03% of the covariance in the observed data. 16.77% of the explained variance was contributed by TAFNEG, 14.64% was contributed by TAFPOS, 14.03% was contributed by TAFSELF and 19.59% was TAFHARM in the model. Factor loadings are presented in Table 1.

Descriptive statistics for the psychometric measures are presented in Table 2. Kuder-Richardson internal consistency coefficients for overall, TAF-NEG, TAF-POS, TAFSELF and TAFHARM subscales were within an acceptable range: 0.89, 0.69, 0.71, 0.70, and 0.78, respectively. Moreover, composite reliability of the scale was excellent as follows: 0.97, 0.88, 0.89, 0.87, and 0.92, respectively. Temporal stability of the scale scares over a two-week time period was also good. Test retest intra-correlations for total and subscales were 0.87, 0.72, 0.68, 0.71, and 0.86, respectively. Corrected item-total correlation coefficients for the overall and subscales of the TAFIC were higher than 0.38 which were indicative of excellent construct validity.

Table 1. Standardized weighted least squares estimations for factor loadings

Items	TAFNEG	TAFPOS	TAFSELF	TAFHARM	R^2
TAFIC1	0.634				0.402
TAFIC2	0.723				0.523
TAFIC3				0.857	0.734
TAFIC4	0.815				0.664
TAFIC5	0.840				0.706
TAFIC6		0.803			0.645
TAFIC7			0.831		0.691
TAFIC8		0.853			0.728
TAFIC9		0.745			0.555
TAFIC10		0.841			0.707
TAFIC11				0.753	0.567
TAFIC12			0.686		0.471
TAFIC13			0.810		0.656
TAFIC14	0.851				0.724
TAFIC15			0.840		0.706
TAFIC16				0.871	0.759
TAFIC18				0.882	0.778
TAFIC19				0.830	0.689
Variance explained	16.77%	14.64%	14.03%	19.59%	65.03%

Table 2. Descriptive statistics for psychometric measures

	N	α	C-R	Retest r	Rjt	Inter-item r	Mean	SD
Thought-Action Fusion Inventory for Children (TAFIC)‡	571	0.89	0.97	0.87	0.38-0.62	0.13-0.55	2.74	3.80
TAF-Likelihood-Other: Negative Events‡	581	0.69	0.88	0.72	0.36-0.59	0.21-0.53	0.57	1.07
TAF-Likelihood-Other: Positive Events‡	583	0.71	0.89	0.68	0.39-0.56	0.28-0.48	0.75	1.12
TAF-Likelihood-Self‡	586	0.70	0.87	0.71	0.42-0.53	0.30-0.48	0.69	1.09
TAF-Harm Avoidance‡	586	0.78	0.92	0.86	0.47-0.62	0.32-0.51	0.72	1.27
Child Depression Inventory	503	0.85	-	-	0.12-0.56	-0.06-0.53	14.80	8.07
Magical Ideation Scale	522	0.83	-	-	0.10-0.53	-0.10-0.39	11.17	5.53
Meta-Cognitions Inventory for Children	446	0.89	-	-	0.21-0.62	-0.10-0.58	56.22	13.91
Positive meta-worry	555	0.75	-	-	0.26-0.61	0.09-0.52	11.41	4.23
Negative meta-worry	559	0.72	-	-	0.20-0.57	0.08-0.49	15.01	4.58
Superstition, punishment and responsibility	550	0.73	-	-	0.27-0.58	0.14-0.55	14.24	4.60
Cognitive monitoring	503	0.72	-	-	0.38-0.51	0.19-0.38	15.56	4.26
Screen for Child Anxiety and Related Emotional Disorders Revised-Child Self-Report	518	0.92	-	-	0.16-0.60	-0.09-0.54	29.41	14.61
Panic Disorder or Significant Somatic Symptoms	554	0.84	-	-	0.35-0.62	0.07-0.50	7.71	5.60
Generalized Anxiety Disorder	562	0.83	-	-	0.43-0.59	0.25-0.47	6.17	4.44
Separation Anxiety SOC	569	0.69	-	-	0.33-0.42	0.10-0.46	6.17	3.44
Social Anxiety Disorder	572	0.70	-	-	0.22-0.52	0.10-0.41	7.00	3.34
Significant School Avoidance	581	0.67	-	-	0.36-0.54	0.20-0.53	2.37	2.01

α=internal consistency(‡ = Kuder-Richardson was computed for internal consistency); C-R= Raykov's composite reliability; Retest r= intra-correlation coefficients between two applications with a two-week interval among 39 participants; Rjt= Corrected item-total correlations (range); Inter-item r= Spearman inter-item correlation coefficients (range); SD= standard deviation

Table 3. Pearson product-moment correlation coefficients

	TAFIC	TAFNEG	TAFPOS	TAFSELF	TAFHARM
Child Depression Inventory	.11 **	.15 **	.03	.11 **	.08
Magical Ideation Scale	.39 **	.36 **	.33 **	.29 **	.34 **
Meta-Cognitions Inventory for Children	.24 **	.20 **	.16 **	.21 **	.22 **
Positive meta-worry	.20 **	.17 **	.15 **	.16 **	.17 **
Negative meta-worry	.17 **	.15 **	.11 **	.15 **	.16 **
Superstition, punishment and responsibility	.22 **	.18 **	.16 **	.19 **	.20 **
Cognitive monitoring	.16 **	.13 **	.10 *	.15 **	.16 **
Screen for Child Anxiety and Related Emotional Disorders Revised-Child Self-Report	.26 **	.24 **	.19 **	.26 **	.18 **
Panic Disorder or Significant Somatic Symptoms	.24 **	.22 **	.18 **	.23 **	.18 **
Generalized Anxiety Disorder	.22 **	.23 **	.14 **	.23 **	.15 **
Separation Anxiety SOC	.24 **	.21 **	.19 **	.23 **	.18 **
Social Anxiety Disorder	.13 **	.11 **	.10 *	.16 **	.06
Significant School Avoidance	.09 *	.10 *	.06	.07	.08 *
Age	-.18 **	-.09 *	-.19 **	-.14 **	-.16 **

**:p<0.05; **:p<0.01*

TAFC= Thought-action Fusion Inventory for Children; TAFNEG= TAF-Likelihood others: Negative events; TAFPOS= TAF-Likelihood others: Positive events TAFSELF= TAF-Likelihood-Self; TAFHARM=TAF-Harm Avoidance

To explore the construct validity of the TAFIC, Pearson product-moments correlational coefficients were computed between the total and subscales for the TAFIC, and the CDI, MIS, MCQ-C, and SCARED-R-CV. The correlations with the CDI were significant, but low, indicating relatively little shared variance. The total and subscale scores of the TAFIC were moderately associated with MIS total. The significant correlations between the TAFIC and subscales of the MCQ-C were less than moderate. Finally, the correlations between the TAFIC and SCARED-R-CV subscales revealed small to moderate associations. Age was inversely associated with thought-action fusion scores. Findings are presented in Table 3.

DISCUSSION

In this study, the validity and reliability of TAFIC were examined in a Turkish children and adolescents population. This study was the first to evaluate psychometric properties of TAFIC in a different culture. Therefore, our findings were only compared with the original validation study [6]. The factor structure, internal consistency, reliability, construct validity of the scale were analyzed. The psychometric properties of the Turkish version of TAFIC were found satisfactory. As expected and similar to Evans et al [6], age was negatively correlated with TAF reflecting a developmental phenomena which younger children would express more TAF than older.

The original four-factor latent structure of the instrument was replicated for the Turkish version using CFA. Covariance and factor loadings were found satisfactorily and the four factor model were explained adequately. Isomorphic to the initial validation study, we found that TAFIC consisted of TAF-NEG, TAF-POS, TAF-SELF and TAF-HARM subscales relying on the data on Turkish youths. Both total scale and subscales of TAFIC-T internal consistency coefficients were over 0.70 and they were adequate for internal consistency [33]. In the original validation study, internal reliability coefficient was 0.92 for total scale, and subcales' coefficients ranged from 0.71 to 0.86 [6]. While evaluating the test-retest reliability for the Turkish version, intraclass correlation coefficients ranged from 0.68 to 0.87 for the total and subscale scores, also showing adequate two-week temporal stability. Corrected item-total correlation coefficients provided excellent construct validity. We could not compare our results for test-retest reliability and corrected item-total correlations because there were no information in the Evans' study [6].

While exploring the construct validity of the TAFIC, the relationship with the scores on the CDI, MIS, MCQ-C and SCARED-R-CV were also examined. In the current study, relatively mild associations between TAF and anxiety-related disorders were identified. Similar to our finding, small to moderate relationships between TAF and anxiety were found in previous studies [1,6,7]. In keeping with the literature, , associations between the TAFIC and depression were found to be low, indicating relatively little shared variance within these two constructs, Meyer et al (2013) reported that TAF was had strongly association with OCD than depression [34]. On the other hand, Muris et al [7] demonstrated significant moderate association between TAF and depression. Although TAF was not strongly related to either anxiety or depressive symptom as the case with OCD symptoms, it was thought that there might be a relationship between TAF and other emotional disorders [1,34] . Moreover, TAF was thought as a specific type of magical thinking [1], we found moderate association between TAF and magical thinking. Berle et al [1] argued that evidence showing the relationship between TAF and magical thinking had limited proof. Although TAF was thought as a metacognitive appraisal [1], we found relatively mild associations between TAF and metacognitions. Taken together, the correlations between the TAF and anxiety, depression, magical thinking and metacognitions revealed small to moderate associations, indicating that while related, all these conceptualizations reflect independent psychological constructs.

4.1 Limitations

This study had several limitations. First, study sample was not representative for all Turkish children, although participant were recruited from a region where represents a high variation in socioeconomic status of children and adolescents. Secondly, linguistic validation and reliability of a scale in one sample is not sufficient to generalize that future replication studies using clinical and nonclinical samples are needed for further psychometric investigations. It was very important to explore the development of TAF in different cultural contexts [1,35,36]. Cross-cultural validation of TAF is therefore important for assessing different cultural features and psychological aspects. Thirdly, there is no other questionnaire for assessing TAF in Turkish children and adolescents and also TAFIC was not validated in other languages and cultures. Thus we could not compare and discuss our findings with other studies. Despite all those limitations, we hope that our study will spark future psychometric investigations of the TAFIC and assessment of TAF in different languages and cultures.

CONCLUSION

Thus, overall, the Turkish version of the TAFIC is found to be a reliable and valid scale that can be used in the Turkish children and adolescent. The TAFIC seems to be a useful tool for assessing TAF completed quickly by children adolescent. The construct of TAF indexed by the TAFIC may provide a sophisticated understanding of the role of this construct in development and maintenance of emotional disorders in general and OCD in particular.

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REFERENCES

[1] Berle D, Starcevic V. Thought-action fusion: Review of the literature and future directions. Clin Psychol Review 2005; 25:263-84.

[2] Piaget J. The Child's Conception of the World (Tomlinson, J. and Tomlinson, A. trans.). London: Granada Publishing. 1973.

[3] Rachman S. A cognitive theory of obsessions. Behav Res Ther 1997;35:793-802.

[4] Shafran R, Thordarson DS, Rachman S. Thought-action fusion in obsessive compulsive disorder. J Anxiety Disord 1996;10(5):379-91.

[5] Amir N, Freshman M, Ramsey B, Neary E, Brigidi B. Thought-action fusion in individuals with OCD symptoms. Behav Res Ther 2001;39:765-76.

[6] Evans DW, Hersperger C, Capaldi PA.Thought-action fusion in childhood: measurement, development, and association with anxiety, rituals and other compulsive-like behaviors. Child Psychiatry Hum Dev 2011;42(1):12-23.

[7] Muris P, Meesters C, Rassin E, Merckelbach H, Campbell J. Thought-action fusion and anxiety disorders symptoms in normal adolescents. Behav Res Ther 2001;39:843-52.

[8] Rassin E, Muris P, Schmidt H, Merckelbach H. Relationships between thought-action fusion, thought suppression, and obsessive-compulsive symptoms: A structural equation modeling approach. Behav Res Ther 2000;38(9):889-97.

[9] Rassin E, Diepstraten P, Merckelbach H, Muris P. Thought-action fusion and thought suppression in obsessive-compulsive disorder. Behav Res Ther 2001;39(7):757-64.

[10] Abramowitz JS, Whiteside S, Lynam D, Kalsy S. Is thought-action fusion specific to obsessive-compulsive disorder? A mediating role of negative affect. Behav Res Ther 2003;41:1069-79.

[11] Goods NA, Rees CS, Egan SJ, Kane RT. The Relationship Between Magical Thinking, Inferential Confusion and Obsessive-Compulsive Symptoms Cogn Behav Ther 2014; 43:(4) 342-50.

[12] Barrett PM, Healy LJ. An examination of the cognitive processes involved in childhood obsessive-compulsive disorder. Behav Res Ther 2003;41:285-99.

[13] Kadak MT, Balsak F, Besiroglu L, Çelik C. Relationships between cognitive appraisals of adolescents with OCD and their mothers. Compr Psychiatry 2014;55(3):598-603.

[14] Libby S, Reynolds S, Derisley J, Clark S. Cognitive appraisals in young people with obsessive compulsive disorder. J Child Psychol Psyc 2004;45(6):1076-84.

[15] Farrell LJ, Waters AM, Zimmer-Gembeck MJ. Cognitive biases and obsessive-compulsive symptoms in children: examining the role of maternal cognitive bias and child ag. Behav Ther 2012;43:593-605.

[16] Werner H. Comparative psychology of mental development. International Universities Press, New York, 1948.

[17] García-Montes JM1, Pérez-Alvarez M, Soto Balbuena C, Perona Garcelán S, Cangas AJ. Metacognitions in patients with hallucinations and obsessive-compulsive disorder: The superstition factor. Behav Res Ther 2006;44, 1091-04.

[18] Eckblad M, Chapman J. Magical ideation as an indicator of schizotypy. J Consult Clin Psychol 1983;51:215-22.

[19] Çam Z, Seydooğulları S, Artar M. Psychometric properties of the magical ideation scale in high school adolescents. Düşünen Adam: J Psych Neurol Sci 2014;27:34-42.

[20] Kovacs M. Rating scale to assess depression in school aged children. Acta Paedopsychiatr 1981;46:305-15.

[21] Öy B. Children's Depression Inventory: depression scale for children: study of validity and reliability. Turk Psikiyatri Derg 1991;2:132-37.

[22] Birmaher B, Brent DA, Chiappetta L, Bridge J, Monga S, Baugher M. Psychometric properties of the screen for child anxiety related emotional disorders (SCARED): a replication study. J Am Acad Child Adolesc Psychiatry 1999;38:1230-36.

[23] Karaceylan CF, Agaoglu B, Karakaya I, Coskun A. Screening instrument for children anxiety disorders: study of validity and reliability. 15th National Congress of Child and Adolescent Mental Health and Disorders. Istanbul, 2005.

[24] Cartwright-Hatton S, Mather A, Illingworth V, Brocki J, Harrington R, Wells A. Development and preliminary validation of the Meta – cognitions Questionnaire – Adolescent Version. J Anxiety Disord 2004;18:411-22.

[25] Bacow TL, Pincus DB, Ehrenreich JT, Brody LR. The metacognitions questionnaire for children: development and validation in a clinical sample of children and adolescents with anxiety disorders. J Anxiety Disord 2009;23:727-36.

[26] Irak M. Standardization of Turkish form of Metacognition Questionnaire for Children and Adolescents: the relationships with anxiety and obsessive-compulsive symptoms. Turk Psikiyatr Derg 2012;23:46-52.

[27] Wirth RJ, Edwards MC. Item factor analysis: current approaches and future directions. Psychol Method 2007;12:58-79.

[28] Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Struct Equa Mod: A Multidiscip J 1999;6:1-55.

[29] Yu CY. Evaluating cutoff criteria of model fit indices for latent variable models with binary and continuous outcomes. Unpublished doctoral dissertation, University of California, Los Angeles, 2002.

[30] Raykov T. Coefficient alpha and composite reliability with interrelated non-homogeneous items. Applied Psychol Measur 1998;22, 375-85.

[31] Raykov T. Bias of coefficient alpha for fixed congeneric measures with correlated errors. Applied Psychol Measur 2001; 25(1):69-76.

[32] Raykov T. Estimation of composite reliability for congeneric measures. Applied Psychol Measur 1997;21(2), 173-84.

[33] Tavakol M, Dennick R. Making sense of Cronbach's alpha

Int J Med Educ 2011; 2: 53-55.

[34] Meyer JF, Brown TA. Psychometric Evaluation of the Thought-Action Fusion Scale in a Large Clinical Sample. Assessment 2013;20(6): 764-75.

[35] Einstein DA, Menzies RG. The role of magical thinking in obsessive compulsive symptoms in an undergraduate sample. Depr and Anx 2004;19:174-79.

[36] Yorulmaz O, Yilmaz AE, Gencöz, T. Psychometric properties of the thought-action fusion scale in a Turkish sample. Behav Res Ther 2004;42:1203-14.

ADDENDUM

Çocuklar için Düşünce Eylem Kaynaşması Ölçeği

		Doğru	Yanlış
1	Annem veya babamın işlerini kaybedeceğini sadece düşünmem bile buna gerçekten yol açabileceğim anlamına gelir.		
2	Kardeşlerimin yaralanacağını sadece düşünmem bile onların yaralanmalarına gerçekten sebep olur		
3	Arkadaşımın oyun alanında yaralanmayacağını sadece düşünmem onun yaralanmamasını gerçekten sağlar		
4	Arkadaşımın cezalandırılacağını sadece düşünmem bile bunu gerçekten sağlar.		
5	Annem veya babamın hasta hissedeceklerini sadece düşünmem bile onların hasta hissetmelerine gerçekten sebep olur.		
6	Arkadaşımın kampta eğleneceğini sadece düşünmem bile onun gerçekten eğlenmesine sebep olur.		
7	Salıncaktan düşeceğimi sadece düşünmem bile düşmeme gerçekten yol açar.		
8	Annem ya da babamın yeni bir işe gireceğini sadece düşünmem bile onların yeni bir işe girmesini gerçekten sağlar.		
9	Annem ya da babamın piyangoyu kazanacağını sadece düşünmem bile onların kazanmalarını gerçekten sağlar.		
10	Annemle babamın kardeşlerime güzel şeyler söylediklerini sadece düşünmem bile onların kardeşlerime güzel şeyler söylemelerini gerçekten sağlar		
11	Arkadaşımla dalga geçilmediğini sadece düşünmem bile onunla dalga geçilmemesini gerçekten sağlar.		
12	Hastalanacağımı sadece düşünmem bile hastalanmamı gerçekten sağlar.		
13	Cezalandırılacağımı sadece düşünmem bile cezalandırılmama gerçekten sebep olur.		
14	Annem veya babamın hastalanacaklarını sadece düşünmem bile onların hastalanmalarına gerçekten sebep olur.		
15	Sallanan oyuncaklardan düşeceğimi sadece düşünmem bile düşmemi gerçekten sağlar.		
16	Annem ve babamın sağlıklı kalacaklarını sadece düşünmem bile onların sağlıklı kalmalarını gerçekten sağlar.		
17	Arkadaşımın oyun alanında yaralanmayacağını sadece düşünmem bile onun yaralanmamasını gerçekten sağlar.		
18	Kardeşimin yere düşmeyeceğini sadece düşünmem bile onun düşmemesini gerçekten sağlar.		
19	Arkadaşımla dalga geçilmediğini sadece düşünmem bile onunla dalga geçilmemesini gerçekten sağlar.		