

Standardization of Turkish Form of Metacognition Questionnaire for Children and Adolescents: The Relationships with Anxiety and Obsessive-Compulsive Symptoms



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SUMMARY

Objective: There were two aims of the present study. The first aim was to evaluate the psychometric properties of the Metacognition Questionnaire for Children and Adolescents (MCQ-C) among Turkish children and adolescents. The second aim was to analyze relationships between metacognitive processes, anxiety, and obsessive-compulsive symptoms among Turkish children and adolescents.

Method: Four hundred and seventy primary and high school students (205 female, 265 male) from 71 different public schools in Istanbul participated in the study. Three questionnaires were used. In addition to MCQ-C, State-Trait Anxiety Scale for Children and Maudsley Obsessive-Compulsive Inventory were administered in the study.

Results: The Turkish form of MCQ-C showed acceptable to good test-retest reliability and good internal consistency and convergent validity. Construct validity was evaluated by confirmatory factor analysis using AMOS. The fit indices of confirmatory factor analysis suggested an acceptable fit to a four-factor model consistent with the original MCQ-C. Significant positive correlations between subscales of MCQ-C and measures of anxiety and obsessive-compulsive symptoms provided further support for the convergent validity of the Turkish form of MCQ-C. Group comparisons showed that the effect of age was significant on the MCQ-C positive meta-worry subscale only; on the other hand, effect of gender was significant on MCQ-C negative meta-worry subscale and total score.

Conclusion: The psychometric properties of Turkish form of MCQ-C showed that the instrument is a valuable addition to the assessment of metacognition for Turkish children and adolescents.

Keywords: metacognition, MCQ-C, anxiety, obsession, compulsion

INTRODUCTION

Cognition can be described as a superior operational mechanism that consists of various and different mental structures, process, and function (Lieberman 1994). According to Crick (2000), this superior mechanism is composed of various structures like the relationship between chemical elements but has different features than the structures it is composed of. Metacognition is a novel concept compared to cognition and many studies have explored this concept in recent years. Metacognition can be described as a higher-order cognitive

structure, i.e. knowledge and processes that control, execute, and monitor cognition. Metacognition is a superior system that encompasses a person's self-awareness of his or her cognitive functions and facts, and enables a person purposefully to direct these functions and facts (Crick 2000, Dienes and Perner 1999). In other words, it is a person's knowledge about his/her own knowledge, thoughts about his/her own thoughts, or one's eye looking to his/her own cognitive process (Tosun and Irak 2008).

Metacognitive dysfunctions lead to dysfunctional thoughts and coping strategies, which are related to psychological

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disorders (Cartwright-Hatton and Wells, 1997). According to this hypothesis, people have some negative and positive beliefs (metacognitions) about their thoughts (their dysfunctional cognitions), which effects the evaluation of their experiences. Dysfunctional cognitions and metacognitive beliefs are related with maladaptive responses (Cartwright-Hatton and Wells, 1997; Gwilliam, et al 2004).

The number of researchers studying the metacognitive models related to psychological problems has increased in recent years. Research has supported the importance of metacognition in generalized anxiety disorder (GAD) (Wells, 2005), obsessive-compulsive disorder (OCD; Fisher and Wellls 2004; Myers and Wells 2004; Wells and Papageorgiou 1998), post traumatic stress disorder (PTSD) (Holeva Tarrier and Wells 2001), psychoses (Bacon et al 2001, Morrison and Wells 2003; Weiss et al 2002), depression (Papageorgiou and Wells 2003), and substance abuse (Toneatto 1999). In addition, new models were developed in order to explain the role of metacognition in these disorders. For example, according to the metacognitive model of OCD, people have negative beliefs about the importance of some intrusive thoughts and their impacts. For instance “I always have to be worried so as to be ready for negativity”, or “If I think that I’ll hurt my children, it indicates that I will”. Dysfunctional metacognitive beliefs result in neutralizing and checking rituals. For example, “If I don’t behave a certain way, the escalating emotion will drive me crazy”, or “unless I perform this ritual, that thought will materialize.” Thereby, their evaluations about the threat will become permanent, resulting in less confidence in their memory (Mather and Cartwright-Hatton, 2004).

Metacognition is a new research area in Turkey. Along some experimental studies (e.g. Irak 2005, Peynircioğlu and Tekcan 2000, Tekcan and Aktürk 2001), there are some other studies investigating the relationships between metacognition and behavioral problems (e.g. Irak and Tosun 2008, Tosun and Irak 2008). MCQ is one of the measures used to assess metacognitive process. Adaptation of the short form of MCQ, named MCQ-30 was completed with Turkish university students by Tosun and Irak (2008), which indicated adequate psychometric skills. Turkish version of the MCQ-30 has five components, which is the same as the original form. These factors are: (1) positive beliefs, (2) cognitive confidence, (3) uncontrollability and danger, (4) cognitive self-consciousness, and (5) need to control thoughts. However, this scale, which measures metacognitive processes, does not have any form applicable for children and adolescents in Turkish culture. Thus, one of the initial aims of the present study was to standardize and examine the reliability and the validity of the Metacognition Questionnaire for Children (MCQ-C) in a Turkish sample. The second aim was to explore the psychopathological correlates of the MCQ (e.g. anxiety and obsessive-compulsive symptoms) among Turkish children and adolescents.

METHOD

Participants

Four hundred and eighty three (212 females, 268 males) elementary and high school students from 71 different schools in Istanbul participated in the study. Three participants did not mention their gender. Eighteen participants were excluded from the analyses due to incomplete data. The final sample of the study consisted of 470 primary and high school students (205 female, 265 male). Ages varied from 8 to 17 years with the mean of 12.2 ($SD = 2.8$). Participants’ age, gender and grades are presented in Table 1. As mentioned in Table 1, first year elementary school students (age 7) were not included in the study because of their insufficient reading ability. Adaptation of the adult form of the MCQ-30 for Turkish culture was completed by Tosun and Irak (2008), which had a lower age limit of 18. Thus, in this study, 17 was selected as the upper age limit for the children form, which resulted in the exclusion of high school students (age 18) in their last year.

Table 1. Participants’ Age and Gender by Grades

Grade	Female		Male	
	n	Mean Age (SD)	n	Mean Age (SD)
2	31	8.19 (.40)	30	8.10 (.31)
3	31	9.26 (.44)	20	9.15 (.37)
4	18	9.94 (.24)	32	10.03 (.40)
5	25	11.00 (.41)	27	10.96 (.34)
6	34	12.09 (.29)	29	12.07 (.26)
7	11	13.27 (.47)	17	13.06 (.56)
8	19	14.05 (.23)	25	13.93 (.64)
9	12	15.17 (.39)	47	15.02 (.44)
10	3	16.00 (1.00)	23	15.96 (.64)
11	21	17.00 (.00)	15	16.87 (.35)

Measures

Metacognition Questionnaire for Children (MCQ-C). The original MCQ-C was developed by Bacow, Pincus, Ehrenreich, and Brody (2009), which is an adaptation of the MCQ-A (Cartwright-Hatton et al. 2004). The MCQ-A is a 30-item scale designed for adolescents (ages 13-17). As with the adult form (Cartwright-Hatton, & Wells, 1997), the MCQ-A is comprised of five subscales and has acceptable psychometric properties.

In the adaptation study of MCQ-C (Bacow et al. 2009), some changes were made to items to simplify the language for younger children. These changes were tested on a pilot study ($n = 9$) using individual interview. Also, feedback regarding these changes were obtained from clinicians. The major difference between the MCQ-A and MCQ-C is the number of factors. The adult and adolescent forms of MCQ have the same factor structure and number (Positive Beliefs, Uncontrollability and Danger, Cognitive Confidence, Needs

to Control Thoughts, and Cognitive Self-Consciousness). On the other hand, in the original study of Bacow et al. (2009), one of the subscales (Cognitive Confidence subscale) was excluded for theoretical reasons. The final MCQ-C comprised of 24 items and four subscales. Also, with the exception of the SPR subscale, the names of the factors were modified by Bacow et al. The cognitive self-consciousness subscale was renamed as "Cognitive Monitoring", positive beliefs about worry subscale was renamed as "Positive Meta-worry", and uncontrollability and danger subscale was renamed as "Negative Meta-worry". The name of the SPR subscale was not changed.

Each item on the MCQ-C is rated on a 4-point Likert scale: (1) *do not agree* to (4) *agree very much*. MCQ-30 scores range from 24 to 96 points and higher scores indicate greater negative metacognitive activity. The reliability and validity study of the MCQ was done on healthy patients, aged from 7 to 17 years, with various anxiety disorders (general anxiety, OCD, social anxiety, and separation anxiety). Confirmatory factor analysis yielded four factors. Internal consistency analysis indicated that the coefficient alphas for the MCQ-C was 0.87 for the total scale and was 0.64 to 0.86 for subscales. The Penn-State Excessive Worry Questionnaire (PSWQ-C) for excessive worry and depression was significantly associated with MCQ-C subscales and total score support for convergent validity. On the other hand, Children Depression Inventory scores were associated with the MCQ-C Negative-meta Worry subscale only. Pearson correlations were also run for the clinical and non-clinical groups. The results were same for the clinical group, except that in addition to negative metaworry, cognitive monitoring was also significantly and positively correlated with the depression score. For non-clinical group the MCQ-C negative meta-worry and SPR subscales were both significantly and positively correlated with the PSWQ-C support for concurrent validity.

State Trait Anxiety Inventory for Children (STAI-C). The STAI (Spielberger, Gorsuch, & Lushene, 1970) is a self-report questionnaire consisting of 20 items for state anxiety and 20 items for trait anxiety. Both are rated on a 4-point Likert-type scale: (1) *almost never* to (4) *almost always*. STAI-C scores range from 20 to 80 points; higher scores indicate more anxiety. The adaptation study of STAI for children in Turkish population was completed by Özusta (1995). The inventory has psychometrically acceptable levels of reliability and validity. Internal consistency of state anxiety was 0.87 for females and 0.82 for males while trait anxiety was 0.81 for females and 0.78 for males. Test-retest analysis indicated that the correlations were different according to gender and ranged from 0.31 to 0.71.

Maudsley Obsessive Compulsive Inventory (MOCI). MOCI was developed by Hodgson and Rachman (1977) and was designed to explore the level and type of obsessive-compulsive symptoms. The Turkish version of the inventory was restructured by Erol and Savaşır (1988) with seven additional new items, for a total of 37 items. It is 37-item self-report scale with a

yes/no response format. The inventory consists of control, hygiene, slowness, and rumination subscales. Scores range from 0 to 37 points and higher scores indicate more severe obsessive-compulsive symptoms. The Turkish version of the MOCI has adequate reliability and validity values. Internal consistency analysis indicated that the Turkish form of MOCI's Cronbach's Alpha values were 0.81 for 30 items and 0.86 for 37 items. These values ranged from 0.31 to 0.71 for subscales.

Procedure

In the first step of the adaptation study, the MCQ-C was translated to Turkish. In this translation, each item had at least two alternative statements. Afterward, this form was presented to two professors in the Department of American Language and Literature at Bahcesehir University who were fluently bilingual in English and Turkish. According to their suggestions on the scale, an initial form was given to five additional judges with doctorate degrees in psychology and who were also fluently bilingual in English and Turkish. They were asked either to choose the best translation or to make their own suggestions for each item. Next, the five judges met and decided on the final form. In the last step, the final form of the Turkish version of the MCQ-C was back-translated by two different translators with doctorates in psychology. The items of the back-translated form were adequately close to the items of the original scale.

The process of data collection was conducted at 71 public elementary and high schools in Istanbul in the classroom setting. All students were fully informed about the nature of the research but only volunteer students participated in the study. The scales were self-administrated in groups. Each administration took approximately 30 minutes. Additionally, three weeks later, the scales were re-administrated to a group of 154 students for assessing test-retest reliability.

RESULTS

Prior to analysis, the data were tested for normality, linearity, and homoscedasticity that are the central hypotheses of multivariate statistics, and it was additionally investigated for extreme scores. As a result of the analysis, neither univariate nor multivariate outliers were found. In the first step, the results regarding reliability and validity of MCQ-C were presented; in the second step the relationships between MCQ-C, STAI-C, and MOCI were presented.

Inter-item Correlations

Pearson's Correlation was used to investigate the relationships between the 24 items that form the MCQ-C. Selective relationships were found between the items.

Significant correlation coefficients ranged from 0.124 to 0.654 ($p < .01$).

Reliability Results

The internal consistency, split-half reliability, and test-retest reliability were examined. The time interval between the test-retest was three weeks. The test-retest data was completed from 154 (67 females, 87 males) children and adolescents. Results were presented in Table 2.

All correlations were significant. The test-retest correlation ranged from 0.47 (item 9) to 0.88 (item 7) for items and ranged from 0.76 to 0.82 for subscales. These results indicated that the Turkish form of the MCQ-C has acceptable reliability.

Table 2. Test-retest Analysis Results

Items	Test-retest Correlation
MCQ-C1	.503**
MCQ-C2	.856**
MCQ-C3	.506**
MCQ-C4	.728***
MCQ-C5	.562**
MCQ-C6	.574**
MCQ-C7	.882***
MCQ-C8	.596**
MCQ-C9	.474**
MCQ-C10	.572**
MCQ-C11	.687***
MCQ-C12	.801***
MCQ-C13	.727***
MCQ-C14	.870***
MCQ-C15	.749***
MCQ-C16	.704***
MCQ-C17	.682***
MCQ-C18	.506**
MCQ-C19	.764***
MCQ-C20	.598**
MCQ-C21	.531**
MCQ-C22	.787***
MCQ-C23	.596**
MCQ-C24	.496**
Subscales	
Positive Meta-worry	.817***
Negative Meta-worry	.756***
SPR	.788***
Cognitive Monitoring	.808***
Total	.823***

SPR: Superstition, Punishment and Responsibility;

** $p < .01$, *** $p < .001$

Validity Results

1. Internal validity

The Cronbach's Alpha correlation was used. For the MCQ-C, Cronbach's alpha coefficient was 0.73 and the corrected item-total correlations for the scale ranged from 0.04 to 0.42. The Cronbach's alpha coefficient was 0.68 for the first part (odd numbers) and 0.70 for the second part (even numbers), which supports internal validity.

2. Construct Validity

Following the original study (Bacow et al. 2009), Confirmatory Factor Analysis (CFA) was used to evaluate the construct validity. For CFA, the AMOS, version 6.0 (Arbuckle, 2003) was used. Following the original study, we hypothesized that the Turkish version of MCQ-C consisted of four factors. Items were analyzed in accordance with the construct obtained by Bacow et al. (2009). The hypothesized model's results indicated that the fit indexes were acceptable (RMSEA = .05; CFI = .89; GFI = .90; AGFI = .88; RMR = .08) and the results indicated a good fit, $\chi^2 (246, N = 470) = 592.75, p < .001$. Also, no modifications or revisions regarding the model were suggested. It is recommended that RMSEA should be $\leq .05$ and other indexes (e.g. AGFI, CFI, and GFI) should be $\geq .90$ for a consistent model (Byrne, 2001; Hayduk, 1987; Scott, 1983). As a result, factor structure of the Turkish form of the MCQ-C was similar to the original version of the questionnaire and findings confirmed the construct validity of the Turkish form of the MCQ-C (see Appendix 1).

3. Convergent Validity

Previous results indicated that the MCQ significantly and positively correlated with anxiety and obsessive-compulsive symptoms (Cartwright-Hatton and Wells 1997, Irak and Tosun 2008, Tosun and Irak 2008, Wells & Cartwright-Hatton, 2004). In the adaptation study of the adult form of the MCQ in Turkish culture (Tosun and Irak 2008), it was hypothesized that metacognitive processes correlated with obsessive-compulsive symptoms and anxiety (especially trait anxiety). In order to compare these correlational patterns in adult and younger samples and to investigate the convergent validity of the MCQ-C, Pearson correlation of the MCQ-C subscales and total score with STAI-C and MOCI were carried out. Results are presented in Table 3. Consistent with the hypothesis, significant positive correlations were found between MOCI, trait anxiety and MCQ-C subscales and its total score for support convergent validity. On the other hand, state anxiety was significantly correlated with MCQ-C Cognitive Monitoring subscale only, and this correlation was negative.

Table 3. Relationships Between MCQ-C, STAI-C, and MOCI.

	State Anxiety	Trait Anxiety	MOCI Total Score
Positive Meta-worry	-.020	.194***	.192***
Negative Meta-worry	.029	.412***	.331***
SPR	.030	.287***	.236***
Cognitive Monitoring	-.095*	.106*	.267***
MCQ-C Total	-.019	.396***	.401***

SPR: Superstition, Punishment and Responsibility

* $p < .05$, ** $p < .01$, *** $p < .001$

Age Effect

To investigate the relationship between age and MCQ-C subscales and its total score, a multivariate analysis of variance (MANOVA) was conducted. In the analysis, the dependent variables were the MCQ-C subscales and total score, and the independent variable was age. Following Bacow, Pincus, Ehrenreich, and Brody (2009) chronological age was divided in two groups; children (ages 8 to 12) and adolescents (ages 13 to 17). Analysis indicated that the Wilk's lambda was significant ($F = 2.46, p < .05; h^2 = .046$). In addition, age had significant effect on positive meta-worry, $F(9,460) = 7.78; p < .001; h^2 = .086$. Tukey HSD analysis showed that the differences between grade 2 and 4 (negative relationships), grade 3 and 11 (negative relationships), and grade 4 and 8, 9, 10, and 11 (positive relationships) were significant.

Gender Effect

MANOVA was used to analyze the relationship between MCQ-C scores and gender. In the analyses, dependent variables were the MCQ-C subscales and total score and the independent variable was gender. The Wilk's lambda was significant ($F = 3.02, p < .05; h^2 = .025$). Additionally, it was found that gender was significantly related with negative meta-worry, $F(1,468) = 11.98; p < .01; h^2 = .025$, and MCQ-C total score, $F(1,468) = 4.5; p < .05; h^2 = .01$. On both measures, females had higher scores than males. Another MANOVA was conducted to investigate age/grade and gender interaction effect on MCQ-C subscales and total score. Results indicated that gender and age interaction effect was not significantly correlated with MCQ-C scores.

DISCUSSION

This study investigated the psychometric properties of the Turkish version of the MCQ-C in a Turkish sample, age ranged from 8 to 17 years. Results indicated that the MCQ-C had adequate validity and reliability. Specifically, analyses showed that the Turkish form of MCQ-C had high internal consistency; also inter-item correlations were selective and significant. In addition, the CFA indicated that the Turkish version of the MCQ-C had the same factor structure as the original version of the MCQ-C. These factors were positive meta-worry, negative meta-worry, SPR, and cognitive monitoring.

According to the test-retest analysis, inter-item correlations for items ranged from 0.47 to 0.88 while subscales ranged from 0.76 to 0.82, which provided further support for the reliability of the Turkish form of MCQ-C. As mentioned before, previous studies on MCQ found significant positive relationships between metacognitive beliefs and trait anxiety, worry, and obsessive symptoms. The same correlational pattern was found in children and adult samples; the subscales of

MCQ-C and its total score significantly correlated with trait anxiety and obsessive-compulsive symptoms, which provided further support for the convergent validity of the Turkish form of MCQ-C. Similarly, as mentioned above, using the adult form of MCQ-30 in a Turkish sample, Irak and Tosun (2008) reported that metacognition is an important mediator between anxiety and obsessive symptoms. This result should be investigated in children and adolescents and also in different psychopathologies in addition to OCD.

In a psychometric study by Cartwright-Hatton et al. (2004) on healthy adolescent metacognition was believed to be a possible key factor in the development of emotional disorders. In this study, a negative increase of metacognitive beliefs (increasing with age) was found to be related to the increase on the level of stress, anxiety, and obsessive-compulsive symptoms. In the present study, age effect was significant only with positive meta-worry, but gender effect was significant with both negative meta-worry and total score. These results were different than the original study of Bacow et al. (2009). In the original study, Bacow et al. (2009) reported a significant effect of age and gender interaction on the MCQ-C total score. In that research, age was a covariate and the analysis was carried out on a clinical sample only due to the small sample size. Specifically, gender effect was significant on total score only for adolescents and the mean of females' scores was significantly higher than the mean of males. However, in the present study, the interaction effect was not significant. The difference between those two results could be related to the sample that was used, since in the current study, only healthy children and adolescent participants were included in the study and no clinical sample was used. To address this question, the Turkish form of the MCQ-C should be used in clinical populations in future studies. Also, it was found that the cognitive monitoring scores of the participants were higher than other scores of the participants. This issue could also be an important factor and needs to be tested in clinical samples.

Studies with healthy samples using MCQ adult and adolescent forms (Cartwright-Hatton et al. 2004, Cartwright-Hatton and Wells 2004) have found that participants had their highest scores from positive beliefs and cognitive self-consciousness subscales. Identical results were observed both in the present study and also in the original study of Bacow et al. (2009). High cognitive monitoring is important, but not necessarily linked to anxiety disorders. Sica et al. (2007) found that cognitive self-consciousness related to adaptive coping styles; on the other hand, over cognitive monitoring was not a significant marker for maladaptive coping styles. They also mentioned that over cognitive monitoring might be an important marker for intrusive thoughts in OCD. These results are consistent with previous results by Irak and Tosun (2008) showing that metacognition is an important mediator between anxiety and obsessive symptoms in healthy

adults. These relationships should also be investigated in younger samples.

There were some limitations of the current study. The number of males and females were not equal in different grades. All participants were from public schools, while students from private schools were not included in the study. The socio-economic status of the participants was not balanced or

controlled. In spite of these limitations, this study presented satisfactory psychometric properties of the Turkish version of the MCQ-C. As mentioned above, the MCQ-C can be used in Turkish culture to investigate the role of metacognition in clinical samples. Moreover, the investigation of the development of cognitive process in different clinical samples would have important implications for future research.

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APPENDIX 1

Factor Structure of the Turkish form of MCQ-C.

	<i>Kesinlikle katılmıyorum</i>	<i>Biraz katılmıyorum</i>	<i>Biraz katılıyorum</i>	<i>Kesinlikle katılıyorum</i>
<i>Factor 1: Positive meta-worry</i>				
1. If I worry about things now, I will have fewer problems in the future (Bir şeyler hakkında şimdi endişelenirsem, gelecekte daha az sorun yaşarım)	(1)	(2)	(3)	(4)
7. Worrying about things helps me to be organized and keep my stuff in order (Endişelenmek, kendimi ve çevremi düzenli tutmama yardımcı olur)	(1)	(2)	(3)	(4)
9. When I am confused, worrying helps me sort things out (Kafam karıştığında, endişelenmek bunları düzene sokmama yardım eder)	(1)	(2)	(3)	(4)
16. Worrying helps me feel better (Endişelenmek kendimi daha iyi hissetmemi sağlar)	(1)	(2)	(3)	(4)
20. Worrying helps me solve problems (Endişelenmek sorunları çözmeme yardım eder)	(1)	(2)	(3)	(4)
23. I need to worry in order to get my work done (İşlerimi bitirmek için endişelenmeye ihtiyacım var)	(1)	(2)	(3)	(4)
<i>Factor 2: Negative meta-worry</i>				
2. It is not a good idea to worry because worrying is bad for me (Endişelenmek iyi bir şey değil çünkü bana hiç iyi gelmiyor)	(1)	(2)	(3)	(4)
4. If I worry a lot, I could make myself sick (Eğer çok endişelenirsem kendimi hasta edebilirim)	(1)	(2)	(3)	(4)
8. My worrying thoughts keep going, no matter how hard I try to put them out of my head (Engellemeye çalışsam da endişe verici düşüncelerim devam eder)	(1)	(2)	(3)	(4)
10. I can't stop thinking of the things that I worry about (Beni endişelendiren şeyleri düşünmeden duramıyorum)	(1)	(2)	(3)	(4)
13. Worrying might make me go crazy (Endişelenmek beni çıldırtabilir)	(1)	(2)	(3)	(4)
18. Once I start worrying about something, I cannot stop (Endişelenmeye başladığımda bunu durduramam)	(1)	(2)	(3)	(4)
<i>Factor 3: Superstition, punishment and responsibility</i>				
6. If I did not get a worry thought out of my head and then something bad hap- pened, it would be my fault (Endişelendiğim bir düşünceyi durduramazsam ve sonra kötü bir şey olursa, benim hatam olur)	(1)	(2)	(3)	(4)
12. I should be able to tell myself to stop and start thinking about things whenever I want to (İstediğim zaman düşünmeye başlayabilmeli ya da düşünmeyi durdurabilmeli- yim)	(1)	(2)	(3)	(4)
17. If I can't stop my thoughts, I am no good (Düşüncelerimi durduramazsam, benim için hiç iyi olmaz)	(1)	(2)	(3)	(4)
19. If I can't stop my thoughts, bad things will happen (Eğer düşüncelerimi durduramazsam kötü şeyler olacak)	(1)	(2)	(3)	(4)
21. It is bad to think about certain things (Bazı şeyler hakkında düşünmek kötüdür)	(1)	(2)	(3)	(4)
22. If I couldn't be in control of what I think, I would fall apart (Düşüncelerimi kontrol edemezsem, darmadağın olurum)	(1)	(2)	(3)	(4)
<i>Factor 4: Cognitive monitoring</i>				
3. I often notice the thoughts that I have in my head (Kafamdan geçenleri çoğu zaman fark ederim)	(1)	(2)	(3)	(4)
5. When I am thinking about a problem in my head, I take note of how my mind works (Bir sorunu düşünürken, kafamın nasıl çalıştığına dikkat ederim)	(1)	(2)	(3)	(4)
11. I try hard to keep track of the thoughts that I have in my head (Kafamdaki düşünceleri takip edebilmek için çok çaba harcarım)	(1)	(2)	(3)	(4)
14. I am always thinking about the thoughts in my head (Sürekli kafamdan geçenleri düşünürüm)	(1)	(2)	(3)	(4)
15. I pay a lot of attention to the way that I think (Nasıl düşündüğüme sürekli dikkat ederim)	(1)	(2)	(3)	(4)
24. I think about my thoughts over and over (Düşüncelerimi tekrar tekrar gözden geçiririm)	(1)	(2)	(3)	(4)