

The Predictive Value of Interpersonal Schemas, Perfectionism, and Thought Action-Fusion in Obsessive Compulsive Disorder

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ABSTRACT

The predictive value of interpersonal schemas, perfectionism, and thought action-fusion in obsessive-compulsive disorder

Objective: Cognitive vulnerability factors are central in the etiology of obsessive-compulsive disorder. Nosological classifications among symptom clusters have been developed to enable the understanding of possible mechanisms underlying obsessive compulsive symptoms. Previous researchers have emphasized that perfectionist attitudes and thought action-fusion link to increase in obsessive compulsive symptom severity in clinical and nonclinical samples. However, multi-dimensional relations between obsessive compulsive symptoms and vulnerability factors such as interpersonal schemas have received little attention. This study examined connections between cognitive vulnerability factors and obsessive-compulsive symptoms.

Method: The data collected from 263 university students. Associations between variables were analyzed by using structural equation modeling.

Results: The results of the study indicated that dysfunctional interpersonal schemas were the most hazardous factors that predict perfectionist attitudes, thought action-fusion, and symptom severity in obsessive compulsive disorder. Washing and precision were the final manifestation symptoms mediated by checking. Maladaptive interpersonal schemas, perfectionist attitudes, and thought action-fusion were all vulnerability agents in the development of obsessive compulsive symptoms. Checking played a prominent role in exacerbation of obsessive-compulsive symptoms.

Conclusion: Onset and maintenance of obsessive-compulsive disorder is a multidimensional process. Negativistic interpersonal beliefs seem to be an important risk factor. Findings are discussed in the light of current theoretical considerations.

Key words: Obsessive compulsive symptoms, limitedness schemas, perfectionism, thought action-fusion, checking, interpersonal schemas

ÖZET

Obsesif-kompulsif bozuklukta kişilerarası şemalar, mükemmeliyetçilik ve düşünce-eylem kaynaşmasının yordayıcı rolü

Amaç: Bilişsel yatkınlık faktörlerinin obsesif-kompulsif bozukluğun etiolojisinde önemli rol oynadığı düşünülmektedir. Obsesif-kompulsif belirtilerin ortaya çıkışında rol oynayan olası mekanizmaları daha iyi açıklayabilmek için, çeşitli belirtilere ilişkin nosolojik sınıflamalar yapılmaya çalışılmaktadır. Daha önceki dönemlerde yapılmış çalışmalar, mükemmeliyetçi tutumların ve düşünce-eylem kaynaşmasının klinik olan ve olmayan örneklemede, obsesif-kompulsif belirtilerle ilişkilerini ortaya koymuştur. Buna karşın, kişilerarası şemalar gibi, yatkınlık oluşturabilecek etkenler ve obsesif-kompulsif belirtiler arasındaki çok boyutlu ilişkilerin yeterince ele alınmadığı görülmektedir. Bu çalışmada, bilişsel yatkınlık oluşturan faktörler ve obsesif-kompulsif belirtiler arasındaki ilişkiler incelenmektedir.

Yöntem: Bu çalışmaya 263 üniversite öğrencisi katılmıştır. Elde edilen veriler yapısal eşitlik modellemesiyle analiz edilmiştir.

Bulgular: Bu çalışmanın sonuçları, işlevsel olmayan kişilerarası şemaların obsesif-kompulsif bozuklukta, mükemmeliyetçi tutumlar, düşünce eylem kaynaşması ve semptom şiddetini yordayıcı en önemli risk faktörü olduğunu göstermektedir. Obsesif temizlik ve kesinlik arayışı belirtilerindeki artış, kontrol etme belirtilerindeki artışa bağlıdır. Kişilerarası sınırlılık şemaları, mükemmeliyetçi tutumlar ve düşünce-eylem kaynaşması obsesif-kompulsif belirtilerin ortaya çıkmasında yatkınlık oluşturan faktörlerdir. Obsesif-kompulsif belirtiler kategorileri içinde kontrol etme, belirti şiddetindeki artış içinde önemli bir yere sahiptir.

Sonuç: Obsesif-kompulsif belirtilerin ortaya çıkması ve sürmesi, çok boyutlu bir süreçtir. Olumsuz kişilerarası inanışlar önemli bir risk faktörü gibi görünmektedir. Bulgular konuya ilişkin teorik tartışmalar ışığında ele alınmıştır.

Anahtar kelimeler: Obsesif-kompulsif belirtiler, sınırlılık şemaları, mükemmeliyetçilik, düşünce-eylem kaynaşması, kontrol etme

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INTRODUCTION

Patients with obsessive-compulsive disorder experience persistent, inappropriate, intrusive thoughts (obsessions) and compulsive urges to perform acts to neutralize the fear of threats (compulsions). Common themes in obsessive-compulsive disorder include concern of contamination, violence, religious thoughts or rituals, inflated responsibility, inflated fear of harm, hoarding, and symmetry (1,2). Findings of several studies suggest that obsessive-compulsive symptoms can be clustered into categories such as contamination/washing, checking, hoarding, symmetry and ordering, and unacceptable thoughts (3,4).

Cognitive behavioral theories of obsessive-compulsive disorder emphasize the role of dysfunctional beliefs that underlies the development and maintenance of obsessions and compulsions. Senseless intrusive thoughts occur inherently in most people but they may turn into obsessions when they are appraised as threatening. Such assessments about intrusions urge to neutralize the intrusive thoughts by taking action in order to prevent the possible harm (5,6). Several cognitive models reveal the account for obsessive-compulsive symptoms in obsessive-compulsive disorder. Of various cognitive characteristics central to obsessive-compulsive disorder, Rachman (7) suggests that obsessive-compulsive disorder patients may fuse actions and thoughts. In a preliminary study, the decrease in importance of thoughts is accompanied by the reduction in severity of obsessions (8). Shafran et al. (9) posit that thought action-fusion is composed of two dimensions: action-fusion of moral thought and action-fusion of likelihood thought. Moral thought action-fusion represents the belief in which thinking about an unacceptable action is as bad as doing it. Likelihood thought action-fusion represents the belief that thinking about a negative event increases the likelihood of its happening. In both clinical and nonclinical populations, findings emphasize strong evidence that thought action-fusion predicts higher scores on measures of obsessive-compulsive disorder (10).

Perfectionism is found to be a general factor in development of many forms of psychopathology (11).

However, patients with obsessive-compulsive disorder may be distinguished from normal controls with their scores of perfectionism (12-15). Several studies report that perfectionism is significantly correlated with checking (16), washing (17), and compulsive hoarding (18). Researchers emphasize the importance of inflated responsibility and suggest that such concerns triggering obsessive behaviors originate from dysfunctional assumptions in obsessive-compulsive disorder (7,19). According to Salkovskis's cognitive model, inflated responsibility leads to distress, mood disturbance, and compulsive behaviors in obsessive-compulsive disorder (6,20). Inflated responsibility and perfectionism may possibly reciprocally influence each other in patients with obsessive-compulsive disorder. Responsibility attitudes in obsessive-compulsive disorder also include the notion that errors of omissions are equivalent to errors of commissions (21). That is akin to perfectionist concerns over mistakes that lead doubts about actions and trigger excessively high personal standards.

Need for growth is a commonly accepted source of innate motivation that is important for psychological well-being (22,23). The limitedness notion represents an empirical adaptation of motivational schemas emphasized by Beck (24). Limitedness schemas are dysfunctional cognitive patterns including beliefs about limited availability of life opportunities and interpersonal relations. The sense of limitedness conveys four dimensions of limitedness about the world, interpersonal relations, non-incremental beliefs, and perceived interconnectedness (25). Limitedness concerns about the world and interpersonal relations are related to life opportunities as well as warm and innate relations perceived as hard to be increased and connected to each other. The cognition consists of beliefs such as; "No matter how much you work hard the opportunities in life are not enough for everyone", "It seems there are not so much channels in life that carry people to wealth and success", and "Success, wealth and beauty are limited over the world, that it means you are to be deprived of if someone owns any of them".

Baldwin (26) emphasizes the importance of interpersonal schemas for psychological outcomes. It

has been consistently reported by many studies that impairments in psychosocial functioning are typical in obsessive-compulsive disorder (27,28). It is well-established that the construct of perfectionism is composed of interpersonal components. Hewitt and Flett (29) elaborate a model of perfectionism including unrealistic inferences on intrapersonal and interpersonal domains. Perfectionists reveal specific extreme interpersonal beliefs and high evaluative standards with respect to the nature of relationships (30). Empirical studies provide strong evidence on perfectionism which is associated with a number of psychosocial problems, such as low social esteem, low emotional expressiveness, elevated emotional control, low relationship satisfaction, and destructive responses (31-34).

Psychological distress and elevated levels of anxiety are typically reported among perfectionists that the presence of particularly socially prescribed perfectionism brings out poorer psychological outcomes (35,36). Feared consequences pertaining to inner dangers are hypothesized to encompass threat to core self and external threats encompass interpersonal failure and loss that were linked to the fears of losing sense of control in patients with obsessive-compulsive disorder (37). The formulation reflects basic assumptions of cognitive approaches that emphasize dysfunctional cognitive schemas as a feature of anxiety. Both sense of control and desire for control has been shown to be linked to obsessive compulsive symptoms (38). According to Mor et al. (39) perfectionism seems to be a kind of prevention and control mechanism for the elevated fears of threat that emanate from vulnerability schemas. In our opinion, inflated perfectionism represents an attempt to rehabilitate the ruptures in the sense of control. Perfectionism is a kind of control mechanism in order to prevent self, important others and vital objectives from harm and to reach a sense of safety in patients with obsessive-compulsive disorder. We postulate a general aspect of vulnerability in obsessive-compulsive disorder that limitedness schemas may exacerbate fears about loss, failure, harm and losing control concerning interpersonal relations and life objectives. A tendency to the sense of limitedness as a cognitive vulnerability factor includes threat inducing

limitedness beliefs about interpersonal relations and opportunities in the world. Therefore, perceived insufficiency on growth opportunities may lead to both a perfectionist style and the onset of obsessive symptoms as a control mechanism. In addition, Tükel et al. (40) accentuated that the levels of anxiety and depression predict severity of obsessive compulsive reactions and dysfunctional thinking may possibly lead to exacerbation in overall symptom severity. With respect to composite relations between limitedness schemas and obsessive compulsive symptoms, researchers state that poor expectancies about opportunities and intimate relations directed by limitedness schemas may result in low motivation, maladaptive coping styles against stressful life challenges and impairments in affective regulation (25,41). In a preliminary study, Boysan et al. (42) emphasized that the limitedness beliefs about interpersonal relations and perceived interconnectedness significantly predict higher scores of obsessive-compulsive symptoms. That is, limitedness schemas may predict elevations on a tendency to perfectionist attitudes and influence on the worsening obsessive-compulsive symptoms directly or indirectly.

This study aims to assess possible links among distinct cognitive characteristics of limitedness schemas, perfectionism, and thought action-fusion that are thought to be connected to obsessive-compulsive symptoms. Complex associations within cognitive vulnerability factors and obsessive compulsive symptoms are evaluated using a path model. In addition, connections within the symptom subtypes are assessed using a statistical model.

METHOD

Participants

In this study, the participants were 263 volunteer nonclinical Turkish undergraduate students (64% male) from Yüzüncü Yıl University in Van, Turkey. Age of participants ranged from 17 to 40 and mean years of age was 21.26 (± 0.64). Only 7 subjects reported to be married (2.66%). 136 subjects (51.71%) were from

urban and 127 subjects (48.29%) were from rural regions. Main proportion of the sample reported to have average income status, 46 participants (17.49%) were coming from wealthy families and 28 participants (10.65%) reported having financial strains.

Psychological Measures

Thought-Action Fusion Scale (TAF): The Thought-Action Fusion Scale (9) is a 19-item measure designed to measure the extent of confusion in thought and action. Items are rated on a five-point Likert type scale, higher scores reflect a higher proneness to engage in thought-action fusion. In addition to the total score, the Thought-Action Fusion Scale -Moral and the Thought-Action Fusion Scale -Likelihood subscales can be tabulated. The Turkish version of the instrument was translated by Yorulmaz et al. (43) and the measure revealed good reliability and validity in the Turkish sample.

Padua Inventory (PI): The Padua Inventory (44) is a questionnaire originally developed in order to evaluate overall range of obsessive-compulsive disorder symptomatology. We used a 41-item version of the instrument (45). Each item is responded on a five-point Likert type scale. The instrument has adequate levels of internal consistency, test-retest reliability and convergent validity (46). The Turkish version of the Padua Inventory also shows to have good reliability and validity in clinical and non-clinical samples (47).

Limitedness Schemas Questionnaire (LSQ): The Limitedness Schemas Questionnaire (25) is a 30-item measure developed to assess the extent to which an individual's negativistic appraisals about life opportunities and interpersonal relations. Each item is responded on a five-point Likert type scale. The notion of limitedness beliefs is a multidimensional psychological construct of limitedness about the world, interpersonal limitedness, non-incremental beliefs and perceived interconnectedness. The instrument has adequate validity and reliability in Turkish sample (25).

Multidimensional Perfectionism Scale (MPS):

The Multidimensional Perfectionism Scale (29) is a three-part self-report scale designed to assess unrealistic perfectionist expectations of the individual for oneself (Self-Oriented Perfectionism), for others (Others-Oriented Perfectionism), and for oneself prescribed to others (Prescribed-Others Perfectionism). The MPS is composed of 45 statements concerning three types of perfectionistic style with 15 questions for each subscale. Participants respond to each question on a seven-point Likert scale. The reliability and validity of the Turkish version of the study was done by Oral (48).

Procedure

A questionnaire containing all of the measures and a form to investigate demographic features were administered to undergraduates. The study was announced in certain faculties of the university and volunteers interested in this study contacted the researchers. Volunteers participated to the study signed an informed consent prior to administration.

Data Analysis

To investigate the relationship among observed variables, a path model was specified with incrementally fitting approach by using Wald statistics in LISREL. Path analysis allows for the reestimation of models via modification indices that ultimately indicate which unspecified paths may improve goodness of fit a statistical model (49). The greater the value of the modification index, the more the overall fit of the model would be improved if that parameter was added to the model (50). In the initial model, it was commenced with specifying possible cognitive vulnerability characteristics as endogenous variables and obsessive compulsive symptom clusters as exogenous variables. The final model presented in Figure 1 was gradually specified by beginning with freeing of the parameters in the initial model and adding parameters with the largest modification indices.

The structural equation method with the Satorra-Bentler normality correction was used in analyzing the

covariance structure in the path model. Chi-square tests are not used to assess overall model fit due to their sensitivity to sample size and other biases (51). Overall model fit was examined by utilizing the root mean square error of approximation (RMSEA), the comparative fit index, (CFI), and the standardized root mean square residual (SRMR). Chi-square to degrees of freedom ratio (χ^2 / df) with less than or equal to 3, RMSEA and SRMR values less than or equal to 0.10, and CFI values greater than or equal to 0.90 indicated acceptable model fit (50). Significance level was $p < 0.05$.

RESULTS

An optimized model emerged gradually using modification indices from an initial free-parameter

model. The model fit was improved adding proposed causal paths in modification indices which influence substantially to model chi square value. After no significant modification was left, the model fit was considerably improved to an acceptable level. All causal paths, path coefficients, and standard errors in the optimized model are presented in Table 1 (Table 1).

The final optimized model was fitted to a sample of 263 participants and provided a satisfactory fit to observed data ($\chi^2 = 92.40$, d.f. = 46, $\chi^2 / d.f. = 2$, RMSEA = 0.06, CFI = 0.97, SRMR = 0.06). Figure 1 presents the complete model with standardized path values which were all significant at $p < 0.05$. Indirect effects of limitedness schemas on obsessive-compulsive symptoms are presented in Table 2 (Table 2).

Table 1: Standardized parameter estimates of structural model: direct effects of endogenous variables on exogenous variables

| PREDICTOR VARIABLES | DEPENDENT VARIABLES | | | | | | | | |
|-----------------------------------|---------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------------------|-----------------------------------|------------------------------|
| | Impulses | Washing | Checking | Rumination | Precision | TAF-Moral | Self-Oriented Perfectionism | Socially Prescribed Perfectionism | Other-Oriented Perfectionism |
| | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) |
| Impulses | | | | 0.47* (0.06) | | | | | |
| Checking | | 0.45* (0.06) | | | 0.50* (0.06) | | | | |
| Rumination | | | 0.55* (0.06) | | | | | | |
| Interpersonal Limitedness | 0.09 (0.07) | 0.03 (0.07) | 0.01 (0.06) | 0.12* (0.06) | | 0.14* (0.07) | 0.21* (0.07) | 0.22* (0.07) | |
| Limitedness about the World | -0.01 (0.07) | | 0.13* (0.06) | 0.04 (0.06) | | | | | |
| Non-incremental Beliefs | 0.11 (0.08) | | 0.09 (0.07) | 0.08 (0.07) | | | | 0.06 (0.07) | |
| Perceived Interconnectedness | 0.11 (0.07) | | 0.05 (0.06) | 0.07 (0.02) | | 0.14* (0.07) | -0.01 (0.07) | 0.05 (0.07) | |
| TAF-Morality | | 0.12* (0.05) | 0.08 (0.05) | | 0.06 (0.05) | | | | |
| TAF-Likelihood | 0.10 (0.06) | 0.08 (0.05) | | 0.12* (0.05) | 0.13* (0.05) | | | 0.17* (0.06) | |
| Self-Oriented Perfectionism | | -0.01 (0.06) | 0.20* (0.05) | | | | | | 0.40* (0.06) |
| Socially Prescribed Perfectionism | 0.21* (0.06) | | 0.01 (0.05) | 0.09 (0.05) | | | | | |
| Other-Oriented Perfectionism | | 0.13* (0.07) | | | | | | | |
| R ² | 0.16 | 0.29 | 0.42 | 0.42 | 0.30 | 0.05 | 0.04 | 0.11 | 0.16 |

*: $p < 0.05$; Blank entries indicate that no direct effects involving the measure were represented in the model.

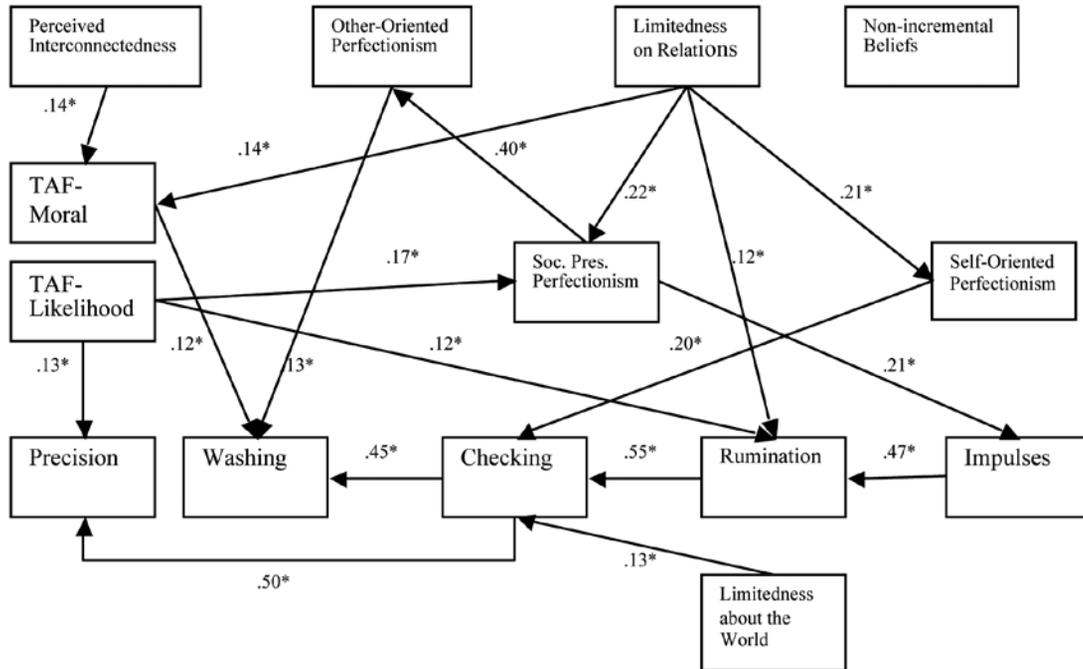


Figure 1: Path model of cognitive vulnerability factors in obsessive-compulsive disorder.

*:p<0.05

Table 2: Standardized parameter estimates of structural model: indirect effects of limitedness cognition on thought-action fusion, perfectionism, and obsessive-compulsive symptoms

| PREDICTOR VARIABLES | DEPENDENT VARIABLES | | | | | |
|------------------------------|---------------------|-----------------|-----------------|-----------------|-----------------|------------------------------|
| | Impulses | Washing | Checking | Rumination | Precision | Other-Oriented Perfectionism |
| | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) | β (SE) |
| Interpersonal Limitedness | 0.05* (0.02) | 0.11* (0.04) | 0.17* (0.05) | 0.09* (0.04) | 0.10* (0.04) | 0.08* (0.03) |
| Limitedness about the World | | 0.07* (0.03) | 0.02 (0.04) | 0.01 (0.03) | 0.08* (0.02) | |
| Non-incremental Beliefs | 0.01 (0.02) | 0.01 (0.03) | 0.08 (0.04) | 0.07 (0.04) | 0.01 (0.04) | 0.01 (0.03) |
| Perceived Interconnectedness | 0.01 (0.02) | 0.06 (0.04) | 0.05 (0.04) | 0.06 (0.04) | 0.06 (0.04) | |

*:p<0.05; Blank entries indicate that no indirect effects involving the measure were represented in the model.

DISCUSSION

Obsessive-compulsive disorder consists of clinically heterogeneous symptoms and practical validity of distinct nosological clusters, the concept of which has been examined in many studies (2,52). Nevertheless, from an etiological perspective, possible relations or

discriminations among symptoms concerning the individual differences such as personality, cognitive schemas or beliefs, attachment styles that possibly influence symptom severity and type, have received little attention. The role of cognitive factors such as thought action-fusion and perfectionism to be central to obsessive compulsive symptoms has been well-established in

many previous reports. In general, the importance of the cognitive factors in obsessive-compulsive disorder has also been empirically supported (11,14,53,54). However, this is a preliminary research that addresses the composite connections of obsessive-compulsive symptoms with cognitive vulnerability factors central to obsessive-compulsive disorder in terms of limitedness schemas, thought-action fusion, and perfectionism. In this study, the composite relations among cognitive vulnerability characteristics and obsessive-compulsive symptoms have been examined all together for the purpose of understanding the underlying process of the onset of obsessive-compulsive symptoms in a nonclinical group. Besides, another aim of the study is to determine the key factors that play an important role on symptom severity.

The findings obtained from the path model can be interpreted as follows: Washing and checking symptoms are known to be the most common manifestations in obsessive-compulsive disorder (55). Results are explanatory for the previous research that washing and checking has distinct features since they reflect different neurobiological characteristics (56). Higher scores on self-oriented perfectionism, ruminative symptoms, and limitedness about opportunities are direct antecedents of obsessive checking behavior in the path model. They are consistent with the previous empirical findings. Researches reveal about the linkages of perfectionism with high relationship standards and a tendency to be destructive in intimate relations (34,57). Additionally, limitedness about the world is an indirect predictor of washing and precision symptoms. Studies have demonstrated that checkers are more prone to have a sense of inflated responsibility as compared to controls (58). High checkers reveal higher responsibility of others (59) and inflated sense of responsibility is central to the obsessive-compulsive symptoms in order to prevent the harm (6). It is suggested that high perfectionists may reveal excessive susceptibility to overestimate their responsibility (8) which could have its implications on the scope of interpersonal domain. The extent to which a person participates in socially prescribed perfectionism is significantly influential on impulsive symptoms. Likelihood dimension of thought action-fusion, limitedness beliefs on interpersonal relations, and

impulsive symptoms are significantly associated with ruminative thinking. Individuals more prone to washing symptoms reveal a tendency to report higher levels of checking, other-oriented perfectionism, and moral thought-action fusion. Likelihood dimension of thought-action fusion and checking symptoms are direct antecedents of a tendency to reveal higher precision symptoms. The results are also consistent with previous research that socially prescribed and self oriented perfectionism are closely related with checking behaviour (60,61). In addition, rumination and perfectionism are associated with the constructs that participants with higher perfectionistic cognitions have scored higher ruminative responses following a stressful event (35). Rumination is closely related to episodic memory performance in both non-clinical and clinical group impinging on checking. Rumination is found to be the direct predictor of checking behavior (62). Thought action-fusion is fundamental to thought suppression process that exacerbates checking symptoms as well (63).

Baldwin (26) has connoted the importance of interpersonal approaches even with miscellaneous descriptions and has delineated the predictive value of interpersonal schemas in psychological outcomes. Compatible with Baldwin's notion, maladaptive interpersonal limitedness schemas linked to socially prescribed perfectionism, self-oriented perfectionism, moral dimension of thought-action fusion, and ruminative symptoms. Moreover, interpersonal limitedness schemas are found to be indirectly associated with impulses, washing, checking, and precision symptoms, as well as other-oriented perfectionism. Similar findings have been reported in a preliminary study that dysfunctional interpersonal cognition is substantive to severity of obsessive symptoms after controlling for anxiety and depression (42). Myhr et al. (64), have found that the insecure attachment style is prevalent among patients with obsessive-compulsive disorder. Severe impairment in psychosocial functioning is also typical in obsessive-compulsive disorder (27,28). However, so far, interpersonal factors in obsessive-compulsive disorder have received a limited attention. Given the current

model concerning the possible factors underlying obsessive compulsive symptoms, it seems interpersonal factors may play a very important role on obsessive-compulsive disorder. Several studies have proposed that socially prescribed perfectionism and others oriented perfectionism may be categorized in as negative perfectionistic attitudes (65-67). In line with the theoretical considerations, socially prescribed perfectionism was significantly connected to others-oriented perfectionism and also predicted by likelihood component of thought-action fusion. A tendency to the perceived interconnectedness was a significant predictor of moral component of thought-action fusion.

Fontenelle et al. (68) have reported that obsessive-compulsive disorder patients with washing symptoms concomitant to checking are the poorest respondents to the treatment. Washing and checking have long been recognized with each other and there was strivings to define discriminative or overlapping features of these symptoms in the research (69,70). However, current study suggested that washing, precision and checking are the most susceptible obsessive symptoms to vulnerability factors. Precision was concomitant to washing symptoms and they were the most susceptible components of the symptomatology. Besides, it was necessary to discriminate checking symptoms from washing and precision. Checking was an accelerating factor influenced by limitedness schemas, perfectionism, thought action-fusion and other obsessive symptoms,

particularly by rumination. In a point of view, it seems washing and precision symptoms may be the final manifestation symptoms in obsessive-compulsive disorder. Furthermore, this may be the most significant finding of this study, checking symptoms may be the nodal symptom cluster in determining the symptom severity in obsessive-compulsive disorder.

This study has several limitations. First, the clinical implications of the results should be interpreted with caution since the study was conducted in a non-clinical sample. However, a review has emphasized the similarities across cognitive characteristics among clinical and non-clinical samples (71). Second, the study does not have a longitudinal experimental design that findings should be interpreted with caution. In spite of its flaws, the data has pointed out several important causal associations that are likely to foster further insights for further studies and clinical implications. The results have suggested that interpersonal negativistic schemas lie under self-oriented and socially prescribed perfectionism which are considered to be negativistic perfectionistic attitudes. It was also found that general symptom severity in obsessive-compulsive disorder is strictly associated with maladaptive interpersonal schemas that may play an important role somewhat from different aspects. Finally, it seems checking is the substantive symptom cluster receptive to all vulnerability factors and determine the onset and maintenance in obsessive-compulsive disorder.

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