Predictors of Obsessive – Compulsive Disorder in clinical and non- clinical samples: A Meta – Analysis

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Abstract

Objective: cognitive models of OCD proposed that inflated responsibility/threat, importance/control of thought, and perfectionism/certainly are a vulnerability and maintenance cognitive factors specific to OCD symptoms. Attachment theory assumed that those cognitive factors are obsessive beliefs that can be explained within a family-attachment relationship. Although several studies have been conducted on the specificity of cognitive factors and family–attachment relative to OCD, a meta-analysis on this issue does not exist yet.

Using meta-analytic techniques, the current study summarized cross-sectional data to examine: (a) which stronger predictors are related to OCD symptoms in clinical and non-clinical samples.

Method: Online databases were searched. Cross-sectional studies were included if they (a)assessed OCD symptoms in clinical or non-clinical samples, (b) reported correlations or between-groups data (predictors of OCD symptoms). Seventeen studies (*n*= 6238) were included in random-effect meta-analyses.

Results: Effect size on relation of predictors to OCD symptoms was medium. predictors were strongly associated with OCD symptoms [r= 0.456, p=.0001],

Conclusions: Using meta-analytic technique, the current study examined predictors of obsessive - compulsive disorder, and it revealed that cognitive factors such as "inflated responsibility/threat, importance/control of thought, and perfectionism/certainly "and family-attachment are predictors of OCD.

Keywords: predictors; obsessive – compulsive disorder; clinical sample; non-clinical sample; meta – analysis

التحليل البعدي للعوامل المنبئة باضطراب الوسواس القهري في العينات الاكلينيكية وغير الاكلينيكية

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ملخص :

الهدف : اقترحت النماذج المعرفية للوسواس القهري أن المسؤولية / التهديد المتضخم ، وأهمية / التحكم في الفكر ، والكمال / التأكيد ، هي عوامل منبئة قوية بأعراض الوسواس القهري. وافترضت نظرية التعلق أن تلك العوامل المعرفية هي معتقدات قهرية يمكن تفسيرها ضمن علاقة الارتباط الأسري.

على الرغم من إجراء العديد من الدراسات حول خصوصية العوامل المعرفية والتعلق الأسري بالنسبة إلى الوسواس القهري ، إلا أن دراسات التحليل البعدي غير كافية حول العوامل المنبئة بالوسواس القهري.

باستخدام تقنيات التحليل البعدي ، لخصت الدراسة الحالية بيانات الدراسات السابقة لفحص ما يلي:

(أ) ما هي أقوى المتنبئات المرتبطة بأعراض اضطراب الوسواس القهري في العينات الاكلينيكية وغير الاكلينيكية.

الطريقة: تم البحث في قواعد البيانات على الإنترنت. تم تضمين الدراسات السابقة التي تقوم : (أ) بتقييم أعراض اضطراب الوسواس القهري في العينات الاكلينيكية أو غير الاكلينيكية، (ب) تبحث في العلاقة الارتباطية او التنبؤية باعراض اضطراب الوسواس القهري. تم تضمين ١٧ دراسة (ن = ٦٢٣٨) في التحليلات البعدية العشوائية الأثر.

النتائج: كان حجم التأثير على علاقة العوامل المنبئة بأعراض الوسواس القهري متوسطًا. ارتبطت العوامل المنبئة بقوة بأعراض الوسواس القهري$r = 0.456$ ، $[p = .0001$

الاستنتاجات: باستخدام تقنية التحليل البعدي ، فحصت الدراسة الحالية العوامل المنبئة باضطراب الوسواس القهري ، وكشفت أن العوامل المعرفية مثل "المسؤولية / التهديد المتضخم ،

أهمية / السيطرة على الفكر ، والكمال / التأكيديه" والتعلق الأسري هي عوامل تنبؤية للوسواس القهري.

الكلمات المفتاحية: المنبئات؛ اضطراب الوسواس القهري؛ عينة اكلينيكية؛ عينة غير اكلينيكية ؛ التحليل البعدي

1. Introduction

1.1. Predictors of Obsessive-Compulsive Disorder

Obsessive - compulsive disorder (OCD) is a complex psychiatric condition characterized by repeated frequently intrusive often unwanted thoughts, impulses, images, known as obsessions, along with repetitive overt/covert behaviors, known as compulsions, performed to relieve the obsessive-related distress(American Psychiatric Association [APA], 2013).It is estimated that more than 80 million people worldwide suffer from OCD (Pauls, 2010), with a lifetime prevalence of 2–3% (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). In a recent study, the estimated overall worldwide pooled prevalence was 7.2% (Thomas et al., 2015)

It is broadly accepted that the development of OCD might be attributed to a complex interaction of hereditary, environmental, and psychological processes (Abramowitz,Taylor, & McKay,2009).The origin of OCD is probably to be multifactorial, considering the assorted variety of presenting symptoms, results of several studies conceptualize OCD dimensionally (McKay et al., 2004). A review of factor- analytical studies recognized symmetry/ordering, hoarding, contamination/cleaning, and obsessions/checking as the most commonly extracted dimensions of OCD symptoms (Mataix, Rosario-Campos, & Leckman, 2005).

Despite there are numerous etiological models of OCD, cognitive models of the disorder have received vital empirical support for several of the predictions of cognitive models of OCD(Clark, 2004; Abramowitz et al.,2009).Contemporary cognitive models of OCD symptoms have evolved from Beck's cognitive particularity hypothesis (Clark and Beck 1989), which assumes that certain forms of psychopathology emerge from certain forms of dysfunctional beliefs. The cognitive-behavioral theory of obsessive-compulsive disorder OCD (Rachman, 1998; Salkovskis et al.,2000; Taylor et al., 2007) proposes that OCD emerges from dysfunctional ''obsessive beliefs'' such as inflated estimates of threat and responsibility and beliefs about the importance of, and need to control, intrusive thoughts (Abramowitz, Lackey, & Wheaton, 2009).New theories about etiology and maintenance of OCD, such as the

model of the Obsessive-Compulsive Cognitions Working Group (OCCWG 1997, 2003, 2005) has been created, an international group of researchers studying cognitive factors that involved in OCD symptoms. The research group (OCCWG 1997) has stressed the significant of cognitive domains (beliefs and appraisal) and cognitive processes of OCD, including inflated responsibility/threat, importance/control of thought, and perfectionism/certainly.

Salkovskis (1998, p.40) defined inflated responsibility as "the belief that one has power which is pivotal to bring about or prevent subjectively crucial negative outcomes. these outcomes may be actual, that is, having consequences in the real world, and/or at a moral level". Appraisals of inflated responsibility for harm or threat would be specific to OCD, whereas, overestimated threat is the overestimated belief about the likelihood and serious outcomes of negative events, Importance/control of thoughts the belief that the mere existence of bad thoughts is bad as doing bad actions, and that full control of those thoughts is both conceivable and essential(Bouvard, Fournet, Denis, Sixdenier, & Clark, 2017; Miegel, Jelinek, & Moritz, 2019;OCCWG, 2005).

Inflated responsibility and perfectionism may possibly alternately impact each other in patients with obsessive-compulsive disorder. Since the 1900s multiple scientific theories have associated obsessive-compulsive disorder (OCD)with perfectionism. Early theorists posed that perfectionism is central to OCD's development. They concluded that obsessive perfectionism led to an emphasis on doing right things to such an extent that it turned into an obsession and an approach to avoid uncertainty (Frost, Novara, & Rhéaume, 2002). Since then, theories have ranged from identifying perfectionism as a feature of OCD, to a pattern of belief that leads to OCD behavior, to a direct cause that, when combined with a desire for certainty, leads to the onset of OCD (Frost et al., 2002).

Numerous of recent studies have identified substantial associations between disgust and endorsement of obsessive beliefs, Descriptive and experimental studies have started to investigate the function of disgust as a particular vulnerability in the development and maintenance of OCD (Knowles, Jessup, & Olatunji, 2018; Olatunji et al.,

2010), in particular, dimension of the contamination/ washing symptom (Tolin, Woods, & Abramowitz, 2006). Researchers have proposed that contamination-based OCD may be described as an indicator of dysfunction appraisal and responses to disgust information (Husted, Shapira, & Goodman,2006).Disgust has a tendency to predict avoidance behavior greater generally, a process that is central to cognitive- behavioral theories of OCD (Goetz, Lee, Cougle, & Turkel, 2013).Cognitive- behavioral therapy emphasizes the importance of reappraisal, which can be an especially effective method for people with OCD to overcome the distress associated with experiencing disgust (Knowles et al., 2018).

Anxiety sensitivity might be one of the most important cognitive risk factors recognized in any psychopathology field (Schmidt, 1999), It expands reactivity to stressors (Isyanov & Calamari, 2004). Anxiety sensitivity (AS) is characterized as a deficient belief in the danger of body sensations associated with anxiety that generate fear of anxiety(Reiss & McNally, 1985).A link between anxiety sensitivity and over importance of thought beliefs may make increase the probability to initiate anxiety-neutralizing behaviors, reactions that will increase obsession experiences (Clark, 2004). AS may be a potentially significant feature of OCD's relevant beliefs and it may play a role in the disorder (Calamariet al., 2008).

Psychiatric disorders such as obsessive- compulsive disorder can also be explained within a family-attachment relationship according to the attachment theory and in the light of the attachment dynamic-maturational model (DMM) (Bowlby, 1980).Crittenden (2006) indicates that when family-attachment relationships fail to protect children, increasingly maladaptive methodologies are utilized to wrest some proportion of safety and comfort from an otherwise threatening environment. In this way, the attachment strategies and distortions of information processing "Dysfunctional beliefs" can be associated differentially with many forms of psychiatric disorder. For example, in the "insecure attachment" of avoiding or anxious attachment, compulsive and obsessive strategies are intended to illustrate transformations of knowledge and behavioral organizations which infants are unable to treat. Through maturation the symptoms increase, as psychopathy is

likely only in the early 20s (Crittenden, 2002).OCD research has explored the role of parenting approaches and styles in developing and maintaining this disorder, and it has been found that people with OCD endure considerably greater attachment insecurity than healthy controls (Myhr, Sookman, & Pinard, 2004).

The current study revealed that:

- (Anxiety sensitivity, Cognitive factors, disgust sensitivity, perfectionism, family violence) are important predictors for explaining the obsessive-compulsive disorder (OCD) according to the multiple previous studies.
- The used studies have selected randomly without any biasness.

In sum, using meta-analytic technique, the current study examined predictors of obsessive - compulsive disorder, and it revealed that cognitive factors such as "inflated responsibility/threat, importance/control of thought, and perfectionism/certainly "and family-attachment are predictors of OCD.

The identification of predictors associated with treatment response is a first step towards the development and testing of modifications that may improve treatment efficacy (Selles et al., 2018). There is additional evidence that cognitive factors are linked with family attachment in OCD therapy.

1.1.Objectives and hypotheses

Using meta-analytic techniques, the current study summarized the available evidence from cross-sectional studies to:
(a) examine the relation of responsibility to OCD in both clinical and non-clinical samples. Specifically, consistent with the cognitive models of OCD (Salkovskis 1985), and hypothesized that inflated responsibility beliefs were strongly related to OCD;
(b) examine the relation of responsibility to OCD in both clinical and non-clinical samples. Specifically, consistent with the family-attachment relationships of OCD, and hypothesized that family-attachment relationships were strongly related to OCD.

2. Methods

2.1. Database searches

Conducting the meta-analysis in accordance with the PRISMA guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009). To quantify a possible relationship between variables and OCD, by searching the databases PsycINFO, PubMed and Embase for papers published until May 2020 with the terms relationship AND (*obsessive compulsive disorder* OR *obsessive* OR *obsessions* OR *compulsive* OR *compulsions*) in the title or abstract. No restrictions were made for study design. Reference lists of studies considered for inclusion and relevant review papers were scanned for empirical papers missed by the database search.

2.2. Study selection

All titles and abstracts were screened and Studies that potentially matched the inclusion criteria were examined in full-text. The selection of studies for inclusion in the meta-analysis was made using the following inclusion and exclusion criteria, which were formulated in advance: (a) Papers had to be written in English or Arabic. (b) The populations investigated in the studies had to be adult. (c) Papers had to report primary data. (d) Assessments of variables that predicted OCD had to be reported. (e) Diagnostic assessments of OCD had to be reported, including clinical diagnosis according to DSM or ICD criteria or questionnaires measuring OCD symptoms.

2.3. Data extraction

For the studies judged eligible for inclusion in the meta-analysis, the following data, if present, were extracted: Study characteristics (year of publication, country, study design, use of clinical population, instrument of OCD assessment, instrument of predicted variables of OCD) and subject characteristics (number, mean age, gender, relationship status, education level, OCD severity, OCD symptom, additional assessments on depression, anxiety and personality dimensions or disorders).

the $I2$ statistic was computed in order to test for ho- mogeneity of *ES*. This statistic is an indicator of hetero- geneity of *ES* in percentages. A value of 25% or less indicates low heterogeneity, 50% moderate, and over 75% high (Higgins et al. 2003). Heterogeneity was also anayzed using the *Q*-statistic. A significant *Q* indicates that the variability across

the *ES* is greater than if it would have resulted from subject-level sampling error alone (Lipsey and Wilson 2001). For all analyses, alpha was set to 0.01.

2.4. Meta-analysis

2.4.1. Summary measures

the variables that were coded for each study included correlations between responsibility measures and each syndrome as well as the sample size for each correlation. In addition, reliability coefficients (alpha) for responsibility and syndrome measures were recorded when reported in order to correct for measurement unreliability. Between-groups (i.e., mean difference type) effect sizes were included along with r-type effect sizes. Mean difference-type effect sizes were converted to r-type effect sizes using either Cohen's d or the reported *M (SD)* through formulas provided in ray and shadish (1996). *ES* of 0.80 or more were assumed to be large, 0.50 moderate, and 0.20 small (Cohen 1988). According to Hedges (1981), Hedges' correction for small sample bias was applied to all *ES*.

2.4.2. Publication bias

the likelihood of publication bias was analyzed using the fail-safe *N* method (Rosenthal 1991). This method consists in calculating the number (*N*) of unpublished studies required to reduce the overall *ES* to a non-significant level assuming that the *ES* of such studies are equal to zero.

Subsequently, the Egger test (Sterne and Egger 2005) was applied to examine a publication bias effect. The egger test is an unweighted regression based on the precision of each study as the independent variable1 and the effect size divided by its standard error as the dependent variable. A non-statistically result of the *t*-test for the null hypothesis of an intercept equal to zero, allows to discard publication bias (Sterne and Egger 2005).

the current meta-analysis was performed using the software Comprehensive Meta-Analysis version 2.0.

3. Results
3.1. Study selection

the electronic search and the search through additional sources produced 224 records after duplicates removed. Of those studies, 103 were excluded as they were on irrelevant constructs. Thus, 121 studies were screened at full-text for inclusion. Of those studies, 78 were excluded as they did not use measures on inflated responsibility/threat, importance/control of thought, and perfectionism/certainly "and family-attachment.28 studies were excluded as they were based on prospective designs. 8 studies were excluded as they examined the relation of responsibility to OCD dimensions. After this selection, seventeen studies were included (n= 6238) in the current meta-analysis .

3.2. Study characteristics

The researcher has used 17 studies related to the studies phenomenon to get an overall sight about the correlation between obsessive compulsive disorder (OCD) index and it`s determinants.

Table 1
Characteristics and main results of included studies.

Author	Name of study	Year	Country	population	Age	Gender Female%	Cases	Main Result	correlation
Alzboon	domestic violence and its relationship to obsessive compulsive disorder among Jordanian university students	2014	Jordan	University Students	18-25	46.39	720	Significant positive relationships between domestic violence and obsessive-compulsive disorder	0.44
Arafa	Adaptive perfectionism and maladaptive	2010	Egypt	University Students	18-25	52.32	537	Significant positive relationship between total score	0.224

	perfectionis mand their relationship with some, symptoms of obsessive-compulsive disorder among a sample of university students							of perfectioni sm and some symptoms of obsessive-compulsiv e disorder	
Yehia & Sayed*	Dysfunctio nal cognitive schemas predicting obsessive compulsive disorder.	20 14	Egy pt	Non-clinical workin g populat ion	16. 8-30. 4	61.3	16 8	Significant positive relationshi p between total score of perfectioni sm and some symptoms of obsessive-compulsiv e disorder	0.47
Mogha zy	the impact of domestic violence directed towards children in childhood suffering from depression and obsessive-compulsive disorder and sleep disorders during	20 17	Egy pt	Univer sity student s	18-19	46.5 4	27 5	Significant positive relationshi p between exposure to domestic violence from parents and suffering of the obsessive-compulsiv e in adolescenc	0.523

	adolescence.							e
Alzahrani	The Role of Working Memory Components in predicting Obsessive-compulsive disorder (OCD) among Out-Patients in Saudi Arabia.	2019	Saudi Arabia	clinical OCD: outpatient unit	26.4-29.15	48.2	319	Significant positive relationship between total score of working memory component and obsessive-compulsive disorder	0.854
Esmaeil	Intolerance of Ambiguity and Perfectionism as Predictors of Symptoms of Obsessive Compulsive disorder Among University Students	2014	Egypt	University students	18-33	79.72	360	the intolerance of ambiguity and perfection were strong predictors of the symptoms of OCD	0.35
Bhara & Kyrios	An investigation of self-ambivalence in obsessive-compulsive disorder	2007	Australia	73 clinical OCD: outpatient unit & 50 patients with anxiety disorder, 225	36.6& 36.45 & 19.55 & 43.78	62.9 & 78 & 70.6 & 70.7	391	Significant positive relationships between self-ambivalence and OCD	0.61

				non-clinical undergraduate students & 43 non-clinical community controls					
Blanco-Vieira Et al.,	The impact of attention deficit hyperactivity disorder in obsessive-compulsive disorder subjects	2018	Brazil	clinical OCD: outpatient unit	18-73	46.56	955	Significant negative relationships between ADHD on the clinical presentation of OCD	0.24
Ghasempour et al.,	Predicting Obsessive-Compulsive Disorder on the Basis of Emotion Regulation and Anxiety Sensitivity	2013	Iran	University students	19.23-27.51	91.8	220	reappraisal and anxiety sensitivity were strong predictors of OCD	0.15
Farrell & Barrett	Obsessive-compulsive disorder across developmental trajectory: Cognitive processing of threat in	2006	Australia	clinical OCD: outpatient unit	12-66	54.23	59	Significant positive relationships between cognitive processing of threat and OCD across the	0.354

	children, adolescents and adults							life trajectory	
Desouky Et al.,	Prevalence and Co morbidity of Depression, Anxiety and Obsessive Compulsive Disorders among Saudi Secondary School Girls, Taif Area, KSA	20 15	Saud i Arab ia	Non-clinical Adoles cents	15-17	100	10 24	Significant positive relationshi ps between Depressio n, Anxiety and Obsessiv e Compulsiv e Disorders	0.59
Olatunj i Et al.,	Disgust proneness predicts obsessive-compulsive disorder symptom severity in a clinical sample of youth: Distinction s from negative affect	20 17	USA	clinical OCD: outpati ent unit	12-18	51.6	47 1	disgust proneness and negative affect latent factors independe ntly predicted an OCD symptom severity	0.3
David Et al.	Incremental specificity of disgust sensitivity in the prediction of obsessive-compulsive disorder symptoms:	20 09	USA	N0n-clinical sample s	18-39	52	27 0	Significant positive relationshi ps between disgust sensitivity (DS) and obsessive-compulsiv e disorder	0.57

	Cross-sectional and prospective approaches						(OCD)	
Reuman Et al.,	Obsessive beliefs, experiential avoidance, and cognitive fusion as predictors of obsessive-compulsive disorder symptom dimensions	2018	USA	clinical OCD: outpatient unit	15-65	48	experiential avoidance, cognitive fusion and cognitive fusion strongly predicted to OCD symptoms,	0.39
						92		
Martinelli et al.,	Perfectionism dimensions as predictors of symptom dimensions of obsessive-compulsive disorder	2014	USA	clinical OCD: outpatient unit	18-52	52.17	significant relationship between dimensions of perfectionism and OCD	
						46		0.437
Ramezani Et al.,	Predicting Obsessive Compulsive Disorder Subtypes Using Cognitive Factors	2016	IRAN	University students	18-30	49	inflated responsibility beliefs were strong predictors of the symptoms of OCD	
						208		0.305
Yehia & Sayed*	Dysfunctional cognitive schemas predicting obsessive	2014	Egypt	clinical OCD: outpatient unit	18.7-25.3	37.8	Significant positive relationship between total score of	0.56
						37		

	compulsive disorder.								perfectioni sm and some symptoms of obsessive-compulsiv e disorder	

*:this study has two independent variables that predict the OCD

3.3Meta-Analysis technique

 determining study effect type
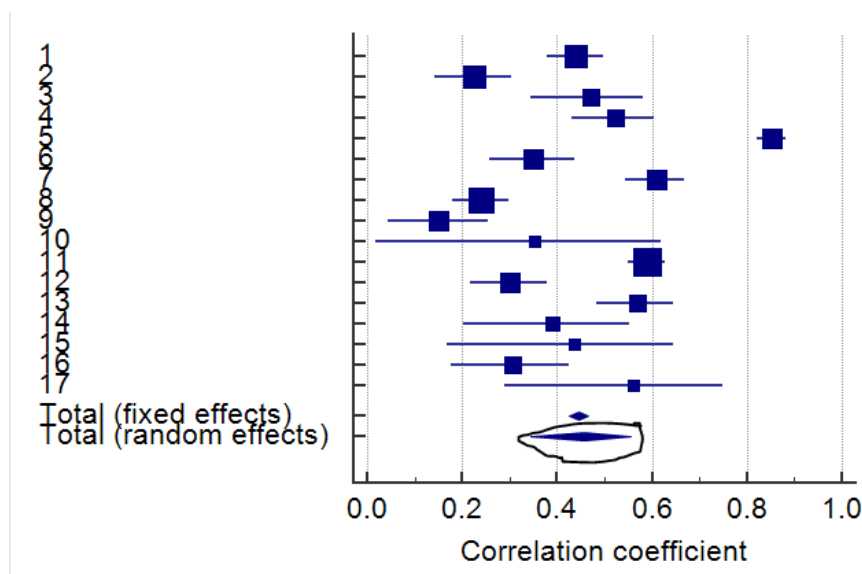
In this section we will use forest plot

Figure 1 Forest plot of studies reporting the relationship between cognitive factors, insecurity family attachment and OCD symptoms: overall effect size and effect size grouped by population (OCD population and general population with OCD symptoms) are reported. Analyses with random effects model.

From figure (1) we can say that the diamond for the random effect is wider than the diamond for fixed effect, so the random effect is the suitable for study the effect size of each study.

1) testing the homogeneity of the studies

the homogeneity of the studies is an imortant feature to make sure that the random effect is the suitable for studying the effect of each study, we can test the homogeneity using Quochran test

the null hypothesis : there is no homogeneity
the alternative hypothesis: there is homogeneity

Table (2)
homogeneity of the studies

Q	415.6870
DF	16
Significance level	P < 0.0001
I^2 (inconsistency)	96.15%
95% CI for I^2	94.94 to 97.07

From table (2) we can say that there is homogeneity in results where the significance level=0.0001 is less than α=0.05 so we will reject the null hypothesis, also the value of I^2(inconsistency)=96.15% which is higher than 50%.

2) **estimating the effect size for each study**

Table (3)
estimating the effect size for each study

| Study	Sample size	Correlation coefficient	95% CI	z	P	Weight (%) Fixed	Random
1	720	0.440	0.379 to 0.497			11.59	6.32
2	537	0.224	0.142 to 0.303			8.63	6.28
3	168	0.470	0.343 to 0.580			2.67	5.94
4	275	0.523	0.431 to 0.604			4.40	6.13
5	319	0.854	0.821 to 0.881			5.11	6.17
6	360	0.350	0.256 to 0.438			5.77	6.20
7	391	0.610	0.544 to 0.669			6.27	6.22
8	955	0.240	0.179 to 0.299			15.39	6.35
9	330	0.150	0.0427 to 0.254			5.29	6.18
10	34	0.354	0.0180 to 0.618			0.50	4.44
11	1024	0.590	0.549 to 0.629			16.50	6.36
12	472	0.300	0.216 to 0.380			7.58	6.26
13	270	0.570	0.484 to 0.645			4.32	6.12
14	92	0.390	0.201 to 0.551			1.44	5.57
15	46	0.437	0.168 to 0.645			0.70	4.86
16	208	0.305	0.176 to 0.423			3.31	6.03
17	37	0.560	0.288 to 0.748			0.55	4.57
Total (fixed effects)	6238	0.444	0.424 to 0.464	37.583	<0.001	100.00	100.00
Total (random effects)	6238	0.456	0.345 to 0.555	7.253	<0.001	100.00	100.00

From table (3) we can say that:

- there is significant correlation between each one of the predictors of obsessive-compulsive disorder (OCD) index (anxiety sensitivity, Cognitive factors, disgust sensitivity, perfectionism, family violence) and the index itself where the p-value= 0.001 is less than α=0.05
- there is positive moderate correlation where the value of correlation coefficient= 0.456 which is range between 0.4 and 0.7

3) checking publication bias

In this part we will check if the researcher makes any bias in selecting the studies using funnel plot. If the small circles were inside the funnel and have no pattern, we can conclude that there is no biasness in selecting the studies.

Figure (2) Funnel plot of publication bias
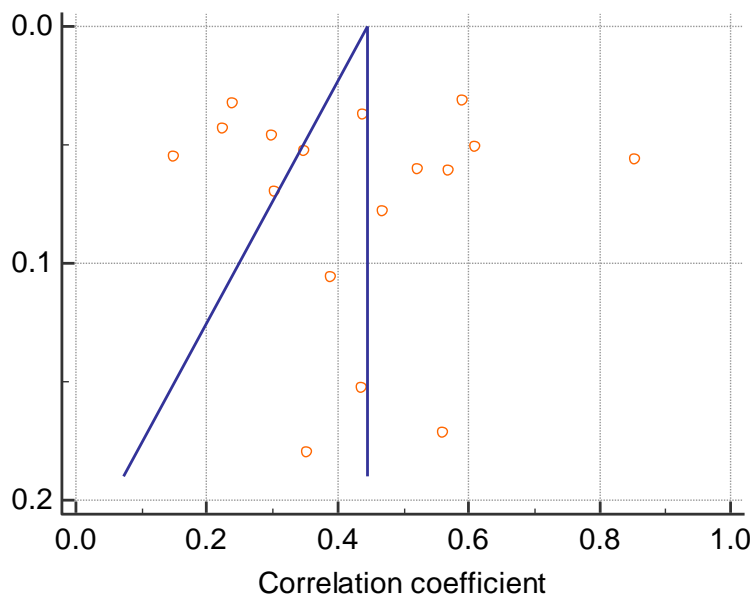
From figure (2) we can say that, There is no publication bias where the small circles were almost inside the funnel and have no pattern, so we can conclude that there is no biasness in selecting the studies.

4. Discussion and conclusion

4.1 Summary of the results:

In this meta-analysis it was set out to assess the association between OCD symptomatology ,cognitive factors , and insecurity family attachment. Pooling data from eight OCD population studies and nine general population studies, we found an association between cognitive factors, insecurity family attachment and OCD sympto- matology, with a medium to large effect size. No significant difference in effect size was observed between the OCD and general population studies. Again, no significant difference in effect size was found between the OCD and general population studies. Age, gender, and topographical region did not affect the associations found.

To increase power and reduce publication bias, this meta-analysis was not limited to clinical studies in OCD patients, but as well included

studies reporting on OCD symptomatology in a general (healthy) population sample.

Findings indicate that attachment theory could be used to extend the current cognitive-behavioural model of OCD by emphasizing developmental and emotional factors that underlie dysfunctional beliefs and fuel the obsessive-compulsive cycle. The effect sizes of the current meta-analysis show robust associations between attachment insecurity and OCD symptomatology

5. Conclusions and Recommendations

In this meta-analysis we a medium to large association between insecure family attachment , and OCD symptomatology (in both patients with OCD and healthy subjects with OCD symptoms) was found. On the other hand, findings also supported cognitive models of OCD as strong predictors of OCD. Although longitudinal designs are needed to make inferences about causality, these findings support emerging models of OCD centring on attachment malfunctioning and cognitive models. Furthermore, they open up the possibility of combining attachment-based therapeutic strategies, such as schema-based extended CBT, with CBT strategies in an attempt to increase therapeutic effectiveness (Doron & Moulding, 2009; Sookman & Pinard, 1999). Alternatively, future studies could investigate the efficacy of contemporary psycho- dynamic treatments for OCD. This seems particularly important in therapy-resistant cases, in which underlying developmental or emotional factors may hamper successful treatment.

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