

Research Article

The Relationship between Insecure Attachment Patterns and Psychopathological Symptoms: The Mediating Role of General Causality Orientations

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Abstract

The main aim of this study was to investigate the mediating role of general causality orientations within Self Determination Theory in the relationship between adult attachment styles and various psychopathological symptoms (depression, OCD symptomology, and general psychological symptoms). Total 750 participants were consisted of 558 female and 192 male. Results of a mediation analysis demonstrated that: autonomy orientation have shown positive effect to statistically significant predictors for various psychopathological symptoms, but having impersonal orientations have shown negative effect. Control orientations have negative effect to statistically significant predictors only for OCD symptomology. Different level causality orientations for each individual was found to be suited for the role of partial mediation this relation, and autonomy orientation was found to have more positive roles than control and impersonal orientations. This relationship is differential with respect to gender effect and anxious or avoidant attachment patterns.

Keywords: Attachment, general causality orientations, psychological symptoms, OCD symptomology, depressive symptoms.

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Attachment is a phenomenon that is determined in the early stages of life and is thought to be continuous and shapes the pattern of a person's relationship with other people. Attachment behavior is an instinctive tendency, and its main objective is to meet instinctive needs. It is the most effective behavioral system and is the main determinant in the establishment of social relations. In attachment theory, it is well known that early life experiences can affect attachment pattern and adult attachment pattern in future social life (Dozier et al., 2008; Lee, 2011; Lee & Hankin, 2009; Sheinbaum et al., 2015). According to attachment theory, each pattern of attachment is associated with different personality traits at different levels and types of interpersonal problems. Individuals who have a secure attachment style are more compatible with their family and friends, have more confidence in themselves and others, and have fewer social problems. Individuals with insecure attachment styles have less adaptability, and are less able to regulate their emotions, less resilient when they need to cope with stress (Bowlby, 1989). Childhood attachment experiences of people, as represented in their mental models, determine their success in social relations and the success of adapting to life's everyday stresses (Cicchetti & Doyle, 2016; DeKlyen & Greenberg, 2008; Dozier et al., 2008; Greenberg, 1999; Rosenstein & Horowitz, 1996).

Personality orientations and psychological symptoms are shaped by early life experiences under the influence of social and environmental conditions (socioeconomic status, income inequality, health complaints, etc.). It is thought that early life experience is critical for personality and attachment (Di Domenico & Fournier, 2014; Ein-Dor et al., 2016). Insecure attachment patterns were determined by personality pathology in adolescents and adults; anxious/ambivalent attachment with withdrawal and introverted pathologies; avoidant attachment has been reported to be associated with various personality disorders that reflect a mixture of introverted and outward pathologies (Rosenstein & Horowitz, 1996). Comprehensive studies on personality or individual differences have shown that psychopathological symptoms are combined as a result of early life experience, parental relationships and environmental factors from childhood (Shiota et al., 2006; Xie et al., 2016), and such relationships might be an important variable in predicting psychopathological

symptoms (Cloninger, 1999). For this reason, attachment styles are thought to be an important predicting factor for both personality orientations and psychopathological symptoms.

Attachment and psychopathological symptoms

Attachment patterns and psychopathological symptoms have been the subject of many studies in the literature. It has been confirmed in these studies that anxious and avoidant attachment styles have a significant effect on psychopathological symptoms. (Amani et al., 2017; Dagnino et al., 2017; Dozier et al., 2008; Ein-Dor et al., 2016; Nanni & Troisi, 2017; Nilsson et al., 2011; Sümer et al., 2009). However, attachment patterns account for only 34-60% of the variance in psychological symptoms in these studies. They have also shown that it is insufficient to explain the relationship between these variables through experimental or correlational analysis. For this reason, recent studies have concentrated on examining the other factors that may mediate this relationship (Alem-Dianati et al., 2016; Dağ & Gülüm, 2013; Darrell-Berry et al., 2017; Tibi et al., 2017). It is evident in the literature that individual differences can be seen as important mediating variables for the relationship between attachment style and psychopathological symptoms (Armani et al., 2017; Bowlby, 1989; Fearon et al., 2016; Rosenstein & Horowitz, 1996). According to recent research, selfregulation capability is an important variable in this relationship (Kinniburgh et al., 2017; Ryan et al., 2016). According to Self Determination Theory, early life experiences develop into enduring individual differences in internalized self-regulation, namely general causality orientations (Deci & Ryan, 1985a, 2000, 2008). As a long-recognized personality trait, it is thought that general causality orientations to personal characteristics will have garnered widespread attention on this field (Deci & Ryan, 1985a, 1985b). For this reason, it is thought to be causality orientations can be a mediating role in the relationship between attachment pattern and psychopathological symptoms.

General Causality Orientations

Three causality orientations (internal, external, and impersonal) have been described as part of SDT; firstly, these represent internal processes, external processes, and emotional state (deCharms, 1968). Then these three causality orientations were re-evaluated by Deci & Ryan (1985a). They assessed the strength of three different motivational orientations within an individual, labeled Autonomous, Controlled, and Impersonal. A person with an autonomous orientation is not oriented toward aspects of the environment, but behaves according to their own choices and attributes their behaviors to internal sources. Highly autonomy-oriented people tend to display greater self-initiation, stimulate intrinsic motivation, and take greater responsibility for their own behavior. Autonomous movement can be altered

to initiate behaviors in the direction of an objective. Autonomy orientated individuals likely exhibit high intrinsic motivation on their actions; in contrast, a control orientation is characterized as a tendency to experience actions as controlled by external pressuring events. In particular, autonomy-oriented people are more likely to interpret external contingencies like rewards, but control-oriented people perceive such events as originating from outside the self (Ryan & Deci, 2019). A person with a controlled orientation is oriented toward being controlled by rewards, structures, ego-involvements, and the directives of others. They might be more attuned to what others demand than to what they want for themselves. People who are highly controlled in their orientation are likely to be dependent on controllers, seek external control, and acknowledge their environment as controlling. Finally, a person with an impersonal orientation believes that the initiation and regulation of their behavior is under the control of another individual's internal orientation, that attaining desired outcomes is beyond their own control, and that achievement is largely a matter of luck or fate (Deci & Ryan, 1985a, 2000; Ryan & Deci, 2019).

Researches have demonstrated that autonomy oriented individuals are shown autonomy support, ego-development, noncontingent self-esteem, attitude-behaviour consistency, and relationship maintaining behaviors (Deci & Ryan, 1985b; Koestner et al., 1992). In contrast, control-oriented individuals are shown to be related to maladaptive outcomes on personality, self-serving attributions, and self-handicapping (Deci & Ryan, 1985a). High-autonomy orientation has been associated with higher levels of self-esteem, ego development, and self-actualization (Deci & Ryan, 1985b) as well as greater integration in personality in past research (Koestner et al., 1992). In contrast, people high in impersonal orientation are likely to be anxious and to feel very ineffective. Individuals with impersonal orientations do not possess the self-control or self-determination required to achieve their goals, and their behaviors are defined by a lack of self-motivation and self-determination. They have no sense of being able to affect outcomes or cope with demands or changes.

General causality orientation theorizes that each orientation exists within each individual to some degree (Deci & Ryan, 1985a). Research by Olesen et al. (2010), as a component of SDT, general causality orientations have stable tendencies in cognition, affect, and behavior, which originates in the well-established and widely researched theory of motivation (Deci & Ryan, 2000). In comparison, in general causality orientations, dispositional personality traits are defined as "individual differences in degrees of internalized self-regulation" (Deci & Ryan, 1985a). The causality orientations and the locus of control concepts discussed by Rotter (1966) are independent of each other. The concept of locus of control arises as a result of the strengthening of the expectation that a particular reinforcement will follow a certain behavior by a person. DeCharms (1968), who explained the basic conceptual background of

general causality orientations, suggested that the source of behavior in the causality orientation concept is the person's own internal processes and their own preferences, or the perception of external pressure or coercion (Deci & Ryan, 1985b). Although there are many studies on the relationship between locus of control and personality traits with psychological symptoms, general causality orientations are quite limited. In this sense, general causality orientations are considered to be remarkable in the literature for new studies.

Attachment and Causality orientations

The effects of early life experiences by predicting attachment styles have been emphasized in several studies examining of developing individuals (Leigh & Anderson, 2013; Örsel et al., 2011). Although the attachment style and causality orientations might be seen unrelated at first, mindfulness has demonstrated related to each other (Leigh & Anderson, 2013). Ryan et al. (2007) suggest a bidirectional relationship between secure attachment and mindfulness. Mindfulness and secure attachment fostering the development of each other (Leigh & Anderson, 2013). If the child develops a sense of autonomy in the early stage of life, learns to act in ways that are in accord with their own internal motivation (Leigh & Anderson, 2013). Additionally, securely attached individuals reported that the intrinsic motivation/autonomy orientation goals/aspirations. This autonomy oriented individuals attained self-acceptance, intimacy, and friendship in their relationship, and a contribution to society. Whereas insecurely attached individuals reported having extrinsic motivation goals or aspirations. This control or impersonal oriented individuals have longing goals of financial success, fame and recognition, and physical appearance. Although each of these theories has a significant body of research, the relationships among attachment style and causality orientations have not heretofore been studied. The relationship between general causality orientation and attachment styles has been studied very restricted area, but general causality orientations and psychopathological symptoms have been relatively investigated in various studies of different symptomologies (Cloninger, 1999; Koestner & Zuckerman, 1994; Strauss & Ryan, 1987; Widiger, 2011).

Causality orientations and psychological symptoms

Despite living in similar environments, individuals` behaviors have been shown to vary greatly among each other because of having different inner sources. Causality orientations theory was developed to describe and account for these inner resources that are thought to represent relatively stable individual differences in motivation (Ryan & Deci, 2017). As the behavioral motivations of individuals who experience similar environments cannot be assessed without understanding differences of inner sources and causality orientation (Deci & Ryan, 1985b, 2000; McAdams & Olson, 2010; Ryan et al., 1995). The behavioral

motivations of individuals impact on psychological symptoms, such as internal or external perception of control, cannot be separated from the personal concept of orientation or inner motivation (Deci & Ryan, 1985b). Deci (1980) stated that finding the correct cause of behavioral motivations of individual impacts on psychological symptoms was crucial for understanding the nature of the differences observed in human behavior and psychological susceptibility in individual living in similar environments. Thus, there is a need to obtain information on individual characteristics relating to general causality orientations that might promote the successful treatment of psychopathological symptoms.

In a study, investigating whether causality orientations were associated with marijuana treatment outcomes, it was found that having either an autonomous or a controlled orientation had implications for response to treatment positively (Blevins et al., 2016). The impersonal orientation was found to predict higher levels of social anxiety, depression, and self-derogation (Deci & Ryan, 1985a), and to discriminate restrictive anorexic patients from patients with other subtypes of eating disorders and from matched comparison subjects (Strauss & Ryan, 1987). Additionally, rates of treatment-seeking for psychopathological symptoms have increased in the past decade (Bor et al., 2014). Thus, although there are some studies in this area, much more are needed to indicate future directions.

In summary, causality orientations, which represent a facet of individual differences, are important in establishing our view of the relationship between attachment and psychopathological symptoms. In this study, the mediating role of general causality orientations in the relationship between adult attachment styles and various psychopathological symptoms in young Turkish adults was investigated. Turkey is known as comprising both Western (personal) and Eastern (community) psycho-cultural values (Kağıtçıbaşı, 2005). Owing to the socio-cultural diversity of Turkey, getting data from seven different psycho-cultural regions of the country will provide a breadth of understanding in cultural aspect. Based on previous research suggesting that autonomous orientation is related to a sense of personal choice regarding one's behavior, and that more personal choice is linked with fewer psychopathological symptoms (Deci & Ryan, 1985a; Ryan et al., 1995).

Hypotheses

H 1: It was hypothesized that when autonomy orientation has a partial mediating role in the relationship between attachment and psychological symptoms (general psychological symptoms, OCD symptomology, and depressive symptoms), this has a role in reducing symptoms; in contrast, impersonal orientation has a significant role in reducing any psychological symptoms. Moreover, it may be associated with an increased of the symptoms.

H 2: Additionally, it was hypothesized that both controlled and impersonal orientations would be positively associated with psychopathological symptoms. In this study, mediating role of autonomous orientation is expected to be decrease symptoms between attachment and psychopathological symptoms, while impersonal orientation will increase.

Method

Participants

In order to represent as well as possible cultural diversity, students studying in ten different universities in seven different geographical regions of Turkey are included in this study. At the beginning of the study, 799 undergraduate students attained voluntarily. Four participants, who have a psychiatric diagnosis, and thirty-two participants, who responded randomly or left blank to an unacceptable level, was removed from the study. There were 558 female and 192 male participants in the model which the general causality orientations variable were tested in. Total 750 participants were consisted of 558 female ages between 17 and 36 (M_F 19.03, SD=0.09) (74.3%), 192 male ages between 17 and 37 (M_m =20.71, SD=0.17) (25.6%). In order to accurately reflect and represent the cultural validity of this study, 10 universities were reached, at least 1 in each geographical region of the country. The ranking of the participants in these regions by percentages is as follows: Eastern Anatolia (4.1%), Central Anatolia (19%), Aegean Region of Anatolia (13.3%), Mediterranean Region of Anatolia (16.7%), Marmara Region of Anatolia (19.4%), Southeastern Region of Anatolia (11.6%) and Black sea Region of Anatolia (12.9%)

Materials

General Causality Orientation Scale (Deci & Ryan, 1985a): Autonomous, controlled, and impersonal orientations were measured using a Turkish adaption (Sen & Dag, 2016) of the original form. The GCOS describes individual differences in people's tendencies to orient toward environments and regulate behavior in various ways. It consists of three subscales (autonomous, controlled, and impersonal) and includes 40 items: 16 items for autonomous orientation, 14 for impersonal orientation, and 10 for controlled orientation. Two of the items (7a, 13b) are reverse scored. Each of the 40 GCOS items is rated on a 7-point scale (from "1= very unlikely for me" to "7= very likely for me"). The variance of the Turkish adaptation explained 32.4% of the total variance. The reliability and validity of the GCOS have been demonstrated by Sen & Dag (2016). Cronbach's alphas were .86 for autonomous (16 items), .71 for controlled (10 items), and .76 for impersonal (14 items); the test-retest coefficient over a 3-week period was .81 for the full scale in this study.

Experiences in Close Relationships Questionnaire-II (Fraley & Shaver, 2000): This scale was developed by Fraley & Shaver (2000) to evaluate the attachment styles of adults. The Turkish adaptation of the scale, which has been standardized by Selçuk et al. (2005), was used in this study. This 36-item measure of adult attachment style measures individuals on two subscales of attachment: Avoidance and Anxiety. Each item is rated on a 7-point scale where 1 = strongly disagree and 7 = strongly agree. In general, avoidant individuals find discomfort with intimacy and seek independence, whereas anxious individuals tend to fear rejection and abandonment. The anxiety subscale score is the sum of scores on odd-numbered items, whereas the avoidant subscale score is the sum of scores on even-numbered items. Scores on each subscale fall with a range of 18–126. Higher scores indicate stronger avoidant or anxious attachment styles. Cronbach's alphas of .90 for avoidant attachment (18 items) and .86 for anxious attachment (18 items) have been reported for the Turkish adaptation of the ECR-II; test-retest coefficients over a 3-month period were .81 for the avoidant subscale and .82 for the anxious subscale (Selçuk et al., 2005). In this study, Cronbach's alpha was .86 (36 items) for the full scale.

Beck Depression Inventory (Beck et al. 1961): The original scale was developed by Beck et al. (1961), and adapted by Hisli (1988, 1989) consists of 21 items and each item is scored between 0 and 3 points. The highest score from the inventory is 63. The higher the total score, the higher the level of depressive symptoms. The aim of this scale is to identify the symptoms of depression and their severity, diagnose depression. Arkar & Şafak (2004) calculated the Cronbach's alpha value of the scale and found it to be 0.90 (21 items). In this study, the full scale had a Cronbach's alpha of .89 (21 items).

Maudsley Obsessive Compulsive Inventory (MOCI; Sanavio & Vidotto, 1985): The scale, which was answered in the form of true - false, was developed to investigate the type of obsessive-compulsive symptomology. The type of self-report filled by participants is a scale (Sanavio & Vidotto, 1985). The scale was adapted to Turkish by Erol & Savaşır (1988), and it was shown to be valid and reliable. The scores that can be obtained from the scale vary between 0 and 37 and the increase in the score indicates an increase in obsessive-compulsive symptoms. In this study the Cronbach's alpha value for the total scale was .81 (37 items).

Brief Symptom Inventory (BSI; Derogatis, 1993): The BSI is an instrument that evaluates psychological distress and psychiatric disorders. This is a 53-item self-report scale that uses a 5-point Likert scale (0 ="not at all" to 4="extremely") (Derogatis, 1993; Şahin & Durak, 1994). Higher scores reflect greater symptom severity. The Turkish version of the BSI was found to consist of five factors in psychometric analysis: "Anxiety (13 items)," "Depression (12 items)," "Negative self (12 items)," "Somatization (9 items)," and "Hostility (7 items)". The

Cronbach's alpha values of these factors were .87, .88, .87, .75, and .76 respectively. In this study the Cronbach's alpha value for the total scale was .88, .89, .88, .73 and .78 respectively.

Procedure

This study, which is part of a project funded by The Scientific And Technological Research Council Of Turkey (TUBITAK) (Project no.114K086), attained the necessary permissions from the Hacettepe University Ethics Commission. After the written consent was signed by the participants, the scales, which were randomly ordered and turned into a booklet, were applied to the participants. The scales were applied collectively by the researchers to the participants within two months. Participants were informed that their participation was voluntary and their written consent was obtained. Owing to the total size of the results, the findings that include part of the study are presented in this research paper. Data were analyzed using SPSS 20.0 and AMOS 23.0 software.

Results

Firstly, the data were examined to check the basic assumptions of multivariate statistics, namely normality, linearity, and homogeneity of variance. All data obtained were tested the basic assumptions of multivariate statistics. The assumptions of normality, linearity, homogeneity of variance had been verified .Firstly, descriptive statistical data (See Table 1) and the relationships, mean and standard deviations of the variables in the model were calculated (See Table 2). Then data analysis progressed to the next stage.

Table 1.

Descriptive Statistic for male (N=192) and female (N=558) subscale, the GCOS, ECR-II, BDI, MOCI, and BSI

	Female	(558)			Male (192)	Comparison			
VARIABLE	М	SD	Min	Max	М	SD	Min	Max	t	Sig
GCOS- Impersonal	45.74	11.16	20	94	46.31	10.63	21	71	0.63	.53
GCOS-Control	42.97	8.07	16	65	43.19	7.05	19	65	0.72	.26
GCOS- Autonomous	90.59	11.51	45	112	83.85	14.47	40	110	-6,58	.00
ECR-II-Avoidant	64.75	18.39	18	115	60.32	18.74	18	108	2.88	.00
ECR-II-Anxious	64.37	17.76	22	113	64.56	16.29	19	113	0.13	.89
BSI	57.83	37.35	0	212	58.20	31.65	2	155	0.13	.88
BDI	12.07	9.27	0	63	12.34	9.68	0	45	0.34	.73
MOCI	14.93	5.61	2	35	13.74	5.81	0	29	2.53	.01

Note: GCOS: General Causality Orientations Scale, ECR-II: The Experiences in Close Relationships Questionnaire- II, BSI: Brief Symptom Inventory, BDI: Beck Depression Inventory, MOCI: Maudsley Obsessional-Compulsive Inventory.

Gender comparisons of the sub-dimensions of general causality trends showed-that men are less autonomous oriented than women t(748) = -6.58, p <.001; there was no significant difference in terms of control and impersonal orientation between men and women. In addition, while women showed more avoidant attachment patterns than men (t(748) = 2.88, p<.01), they also scored significantly higher than men in OCD symptomology (t(748) = 2.53, p<.01).

Table 2
Correlation Matrix of Research Variables

Variable	1	2	3	4	5	6	7	8
1. GCOS- Impersonal	-	0.19**	-0.13**	0.30**	0.24	0.39**	0.38**	0.34**
2. GCOS- Control		-	0.32**	0.20**	0.09	0.17**	0.13**	0.04
3. GCOS- Autonomous			-	-0.06	- 0.16**	-0.01	0.11**	- 0.17**
4. MOCI				-	0.17**	0.31**	0.46**	0.40**
5. ECR-II Avoidant					-	0.26**	0.18**	0.20
6. ECR-II Anxious						-	0.40**	0.35**
7. BSI							-	0.68**
8. BDI								-

*p<.05 **p<.01, GCOS: General Causality Orientations Scale, MOCI: Maudsley Obsessional-Compulsive Inventory, ECR-II: The Experiences in Close Relationships Questionnaire- II, BSI: Brief Symptom Inventory, BDI: Beck Depression Inventory

It is known that mediation variable analysis models can be analyzed in the literature by regression or structural equation modeling methods. However, the most striking result in the paired comparison in the literature appears in the variance values explained. The explained variance values were found to be higher in structural equation modeling analysis than regression analysis (Dursun & Kocagöz, 2010; Gefen et al., 2000). Therefore, in this study, it was used mediating analysis with SPSS 20 and additionally structural equation modeling with AMOS 23 to investigate the mediating role of general causality orientations in the relationship between attachment patterns with psychopathological symptoms. Baron & Kenny (1986) proposed a set of concept to be examined for analysis of mediating role. Baron & Kenny (1986) stated that in the test of the regulatory role of a variable, the interaction term of this variable with the independent variable should have a significant effect on the dependent variable. Accordingly, there are four stages of testing the basic mediation model. In the first step, the effect of the independent variable on the dependent variable; in the second step, the effect of the independent variable on the mediating variable; thirdly, the effect of the mediating variable on the independent variable is tested by simple regression model. In the fourth and last step, the effects of independent and mediating variable on dependent variable are examined by multiple regression test. If a meaningful relationship is

not found in these steps, it is not possible to understand about the basic mediation model. A number of regression analyses and Sobel tests are required to test these criteria.

Analyzes were made using the maximum likelihood method and based on the model testing. Analyzes were made using structural equation models. Firstly, it was used the mediating analysis by Baron & Kenny (1986) on SPSS to investigate the mediating role of general causality orientations in the relationship between attachment patterns with psychopathological symptoms. Secondly, path analysis on AMOS was conducted to ascertain the mediating role of general causality orientations in the relationship between attachment styles with psychopathological symptoms (Depressive symptoms, OCD symptomology, and general psychological symptoms). Detailed information of the analysis can be seen in Table 3, and Results of the analysis for male and female can also be seen in Table 4 (See Appendixes).

In the context of anxious attachment styles, impersonal orientation was found to be a partial mediator of the relationship between the anxious attachment style with OCD symptomology and general psychological symptoms. Control orientation has a partial mediating role only with OCD symptomology; but autonomy orientations do not play a significant role in any psychopathological symptoms. Additionally, none of the general causality orientations have a mediating role in the relationship between anxious attachment styles and various psychopathological symptoms (depression, OCD symptomology, and general psychological symptoms). The variance explained by the partial mediating role of general causality orientation in this relationship ranges from 12% to 25%.

In the context of avoidant attachment styles, impersonal orientation was found to be a partial mediator of the relationship between the anxious attachment style and various psychopathological symptoms (depression, OCD symptomology, and general psychological symptoms). Autonomy orientation has a partial mediating role with depression and general psychological symptoms; but control orientations do not play a significant role in any psychopathological symptoms. The variance explained by the partial mediating role of general causality orientation in this relationship ranges from 3% to 14%.

According to anxious attachment styles for females, control and impersonal orientations have a partial mediating role in the relationship between anxious attachment styles with OCD symptomology and depressive symptoms, but autonomy orientations do not play a significant role in any psychopathological symptoms. Although the data in this study were analyzed in the context of avoidant attachment styles for females, autonomy orientations have a partial mediating role in the relationship between avoidant attachment styles with depressive symptoms and general psychological symptoms. Impersonal orientation has a partial mediating role in the relationship between avoidant attachment styles with overall

psychopathological symptoms (depressive symptoms, OCD symptomology and general psychological symptoms). Control orientations do not play a significant role in any psychological symptoms for females.

In the context of anxious attachment styles for males, autonomy and control orientations do not play a significant role in any psychopathological symptoms. While impersonal orientation has a partial mediating role in the relationship between anxious attachment styles and overall psychopathological symptoms (depressive symptoms, OCD symptomology and general psychological symptoms). Although in the context of avoidant attachment styles for males, autonomy orientation has a partial mediating role in the relationship between avoidant attachment styles with depressive symptoms and general psychological symptoms. By the way, males have avoidant attachment styles with control orientations that have a partial mediating role with only depressive symptoms. Males with impersonal orientation have a partial mediating role in the relationship between avoidant attachment styles with overall psychopathological symptoms (depressive symptoms, OCD symptomology and general psychological symptoms), too.

Path analysis was conducted to determine the mediating role of general causality orientations in the relationships between adult attachment patterns and psychopathological symptoms. Hooper et al. (2008) compilation method was used in evaluation of the compliance index. The analysis revealed adequate fit indices of the measurement model, and no corrections were required. In this case, the identical structural model and measurement overlapped. In accordance with the structural models tested, the relationships between attachment style and overall psychopathological symptoms were examined with AMOS; explained variance values are shown in Figure 1 (see Appendixes).

When the model was tested, it was found to have a fit index of $X^2(27, N=750) = 105.358$, GF: 0.96, AGF: 0.93 NF: 0.97, CFR: 0.95, RMSEA: 0.058. Analysis revealed the significance level of the model is acceptable. In Figure 1 (See Appendixes), emboldened significance levels signify the respective relationships between variables when tested as part of the final model; the remaining significance values relate to the relationships between variables when tested outside the model. According to our results, when to the general causality orientations were assigned a mediating role in the relationship between attachment styles and psychopathological symptoms (general psychological symptoms, OCD symptomology, and depressive symptoms), the relationship was better described.

According to the tested structural models on avoidant attachment styles, autonomous and impersonal orientations were significant as mediating variables in the relationships between avoidant attachment style and general psychological symptoms and depressive symptoms.

While autonomy orientations have a role in reducing symptoms, impersonal orientations have a role in increasing. Additionally, impersonal orientation played a significant partial mediating role between avoidant attachment style and OCD symptomology.

According to the tested structural models on anxious attachment styles, as mediating variables controlled and impersonal orientations have a role in increasing symptoms in the relationship between anxious attachment style and OCD symptomology; only impersonal orientation had a significant partial mediating role between anxious attachment style and general psychological symptoms, having a role in increasing symptoms.

Fit indices of the measurement model for mediating role of general causality orientations with attachment pattern and psychological symptoms (depressive symptoms, OCD symptomology, and general causality orientations) are shown in Table 5 (See Appendixes) for females and males separately.

Discussion

Across time and studies, causality orientations have been associated with a number of personality patterns and psychological symptoms (e.g., Blevins et al., 2016; Cloninger, 1999; Deci & Ryan, 1985a; Strauss & Ryan, 1987; Koestner & Zuckerman, 1994; Olesen et al., 2010; Widiger, 2011). These studies show being each orientation exists within any individual to different degree (autonomous, control and impersonal), and degree of these orientations alleviates or intensifies the symptoms of a number of psychological and physical disorders. Yet, little is known about the etiology of causality orientations and what factors might foster or thwart its development. This study examined the potential contribution of attachment theory and self-determination theory, specifically as a mediating role with causality orientations, to various psychopathological symptomology. Given the growth of self-determination theory, specifically causality orientation research and personality-based interventions, developing an etiological model of causality orientations is an important next step in advancing our understanding of this construct. This model has great potential on cultural context to represent highlights mediating role of these orientations with attachment style and psychopathological symptoms. Getting data from different regions of the country will breadth of understanding in cultural aspect because of great potential of representability. Since this is the first mediating modeling investigating causality orientation on this culture, our findings cannot be compared to relevant previous literature. On the other hand, this model has a great potential as a representation of this area for future research on cultural context and cross-cultural comparison across different countries.

Attachment, causality orientations and depressive symptoms

In the literature, there are several published studies concerned with understanding the relationship between attachment and psychopathological symptoms. Although each study has its own methodology, several have pointed out that could be a mediating role of other variables in the relationship between insecure attachment and depressive symptoms in last decades (Kamkar et al., 2012; Linares et al., 2016; Surcinelli et al., 2010) studied mediating role personality traits in the relationship between adult attachment styles and psychological disease. Moreover, in a study conducted in Turkey, analysis of the relationship between anxious attachment, depressive symptoms, OCD symptomology, and social anxiety showed that conscious flexibility — the ability to modify necessary information to produce reactions — plays both partial and complete mediating roles in controlling behaviors (Dağ & Gülüm, 2013). According to the results of this study, depression diagnosed individuals exhibited higher levels of avoidant attachment as compared to OCD symptomology and general psychological symptoms. This research paper was focused on the same psychological disease (depression, OCD symptomology and general psychological symptoms) and adult attachment styles with the mediating role in the relationship for this time.

In the original form (Deci & Ryan, 1985a, 2008) and the French standardization of GCOS, autonomous orientation and impersonal orientation were negatively correlated with avoidant attachment style (Vallerand et al., 1987). In agreement with this finding, this study demonstrated that both impersonal orientation and autonomous orientation were partially involved in the relationship between avoidant attachment and depressive symptoms. In this study the context of depressive symptoms, autonomous orientation was found to be a partial mediator of the relationship between the avoidant attachment type and depressive symptoms. Specifically, the tendency of individuals with an avoidant attachment style toward depressive symptoms was diminished when this was combined with autonomous orientation. To summarize, individuals who had an avoidant attachment style showed higher levels of depressive symptoms when they also had an impersonal orientation but showed lower levels of depressive symptoms when they also had an autonomous orientation in this study. Variation between impersonal and autonomous orientations in the relationship between avoidant attachment and depressive symptoms explained from 6% to 13% of the variance. On the other hand, a significant negative correlation was detected in the Turkish adaption of the GCOS between the autonomous and impersonal orientations (Sen & Dag, 2016). This finding indicates that variants should be taken into account in further studies of depressive symptoms and attachment. Data obtained in similar studies within the literature can be further investigated with this new viewpoint. In other studies, similar to current, the idea that other factors might be involved in the relationship between depressive symptoms and

insecure attachment has been suggested and studied (Burnette et al., 2009; Kadir & Bifulco, 2013; Liao & Wei, 2015; Lee & Hankin, 2009). This study also confirms the results of previous studies in demonstrating that there is a meaningful and complex relationship between insecure attachment and depressive symptoms, and that causality orientations play important partial mediating roles in this relationship.

Attachment, causality orientations and OCD symptomology

The relationship between attachment styles and obsessive-compulsive symptomology has been previously shown in the literature (Doron et al., 2009; Ivarsson et al., 2010; Myhr et al., 2004; Seah et al., 2018). Insecure attachment has been acknowledged as a predictor of OCD symptomology (Kehoe & Egan, 2019; Sümer et al., 2009; Wiltgen et al., 2015). Doron et al. (2009) concluded that insecure attachment styles contributed to OCD symptoms via OCD-related cognition, while controlling for depression. Recent studies also pointed out the importance of studying the relationship between insecure attachment and OCD symptoms with mediating variable (Arpaci et al., 2017; Gülüm & Dağ, 2014; Sümer et al., 2009).

The results of this study revealed that the controlled orientation was a partial mediator between anxious attachment and OCD symptomology. Accordingly, individuals with anxious attachment combined with a controlled orientation showed an elevated tendency to experience OCD symptomology. According to the study of Doron et al. (2009) attachment patterns contribute to OCD symptomatology via OCD-related cognition, while controlling for depression. An inflated sense of responsibility, perfectionism and importance of control of belief could be an example for OCD-related cognitions. As it is known that highly controlled individuals are likely to be dependent on controllers, seek external control for having internal motivation, and acknowledge their environment as controlling. The fact that avoidant attachment is unrelated to mediating role of the control orientation variable does not indicate that it should be ignored in the model. However, since avoidant attachment is associated with thoughts that others are unreliable and rejecting (Sümer et al., 2009), it is understandable that this type of attachment did not show significant relationships with the control orientation. Similarly, for people with an anxious or avoidant attachment style, impersonal orientation also emerged as a partial mediator of OCD symptomology. Briefly, individuals who exhibited insecure attachment styles with impersonal orientations demonstrated comparatively higher scores on OCD symptomology. Impersonal orientations as a partial mediator role accounted for between 10 and 13% of the variance in the relationship between anxious and avoidant attachment styles and OCD symptomology. The impersonal orientation was found to predict various psychological disorders (e.g., social anxiety, depression, and self-derogation or eating disorders). As expected, plays a partial mediating role in the relationship between both anxious and avoidant attachment styles and general psychological symptoms. Although

there is a clear association between psychopathology groups with OCD and insecure attachment (Cooper et al., 1998), there is no consistent finding regarding the relationship between attachment dimensions. For example, Brennan & Shaver (1998) found that those with higher levels of avoidance reported more obsessive-compulsive symptoms. Cooper et al. (1998) also found that those who had both anxious and avoiding attachment styles had a higher level of OCD symptoms than those who did not. In our study, the mediating role of autonomous orientation was observed to be non-significant for relationships between OCD symptomology and anxious attachment style. With respect to future studies, it may be advisable to examine the relationship between attachment and OCD on the basis of differences in personality traits.

Attachment, causality orientations and general psychological symptoms

High attachment anxiety or avoidance and impersonal orientations emerge as risk factors to develop psychopathology (Ryan & Deci, 2017; Turan et al., 2016; Young et al., 2016). In our study, distinct from other studies in the literature, the role of general causality orientations was investigated with a mediator factor for this relations. Controlled orientation was shown to play a partial mediating role in the relationship between anxious attachment style and general psychological symptoms. Specifically, individuals higher in controlled orientation and having an anxious attachment style showed increased in general psychological symptoms. When controlled orientation was taken into account as a partial mediator of general psychological symptoms, 20% of the variance was accounted for. Impersonal orientation, another partial mediator in this study, was observed to play a partial mediating role in the relationship between both anxious and avoidant attachment styles and general psychological symptoms. Specifically, individuals higher in impersonal orientation and having an insecure (avoidant-anxious) attachment style exhibited stronger psychopathological symptoms. When impersonal orientation was included as a partial mediator, 14-25% of the variance was accounted for. To summarize, both controlled and impersonal orientations were positively associated with general psychopathological symptoms, while autonomous orientation was negatively associated with such symptoms. The findings obtained in this study are consistent with the hypotheses and literature.

An important element of this study was the analysis of general psychological symptoms independently of depressive symptoms or OCD symptomology. Since general psychological symptoms include OCD symptomology and depressive symptoms along with other psychopathological symptoms (e.g., hostility or somatization), the variance within OCD symptomology or depressive symptoms might be expected to follow similar patterns. A significant impact of a variable on psychopathological symptoms might be due to its individual effects on OCD symptomology or depressive symptoms, or the combination of

both. The appearance of significant correlations in the analysis of psychopathological symptom levels lies in the interdependence of psychological well-being from any psychopathology symptoms. Divergent analysis indicated that psychological well-being was fortified when an autonomous orientation was reinforced by secure attachment. In support of this notion, autonomous orientation played a partial mediating role between avoidant attachment and psychopathological symptoms in this study. In short, individuals with an avoidant attachment style combined with an autonomous orientation showed higher levels of psychological well-being as compared to control and impersonal. Autonomous orientation accounted for 3% of the variance in this relationship as a partial mediator.

According to the variance accounted for in all variables, impersonal orientation was an important partial mediator between insecure attachment and psychopathological symptoms (OCD symptomology, depressive symptoms, and general psychological symptoms). It was found that combined with insecure attachment a higher score for impersonal orientation might be a risk factor in terms of predisposition to psychological symptoms. These results are in line with the pioneering study of Deci & Ryan (1985a) in relation to depressive symptoms and well-being. The observation that controlled orientation was an important partial mediator between anxious attachment and OCD symptomology was also compliant with the hypotheses. Individuals with an anxious attachment pattern are known to be sensitive to external stimulus (Doron et al., 2009). Since individuals with a controlled orientation manage initiation and regulation of their behaviors through external pressure and force, this finding supports those reported in previous publications (Deci & Ryan, 1985a). In individuals with an avoidant attachment pattern, autonomous orientation acts as a partial mediator that results in elevated psychological well-being and reduced depressive symptoms. This finding can be explained by the idea that individuals with an avoidant attachment pattern shield themselves from external stimulus, unlike those with an anxious attachment pattern (Bowlby, 1982; Deci & Ryan, 2000; Ryan & Deci, 2017; Terzi, 2013). Additionally, it is well known that well-being and the tendency to depressive symptoms in individuals with an autonomous orientation are greatly affected by internal processes and motivations, rather than external stimulus (Deci & Ryan, 2000). Following this point, in the current study was acknowledge that an autonomous orientation improved well-being and diminished depressive symptom levels within individuals with an avoidant attachment pattern. Consequently, general causality orientations were found to be highly remarkable mediator for explaining the relationship between attachment types and psychopathological symptoms.

Gender differences

When the scores of women and men on the scale of general causality tendencies were taken into consideration, women score higher than men for autonomous orientation, men were

found to score higher than control and impersonal orientation compared to women. In addition, women were found to be significantly different compared to men only in terms of the scores they received from their autonomous orientation. This situation differs significantly from the original study (Deci & Ryan, 1985a). Although it was not within the scope of this study to interpret this small difference, women are thought to act more autonomously in the world with changing time. It should be noted that this finding is a limited result considering the male to female ratios in the study, however, the gender effect may be emphasized in future studies. The participation of female and male participating in the study are about to 1/4 to 3/4, respectively. Thus, data was sub-categorized according to gender and analyzed separately. Structural equation modeling analysis provided very well fitting indexes for whole model and both genders. The findings of this study showed that general causality orientation seems a stronger mediating variable in with depressive symptoms and psychological symptoms varied for male, but only OCD symptomology for female.

Firstly, the partial mediating role of autonomous orientation in the relationship between anxious attachment and depressive symptoms was investigated, but no significant effect was found by gender. Than it has been researched that whether the partial mediating role of autonomous orientation in the relationship between avoidant attachment and depressive symptoms varied by gender. The findings of this study showed that autonomy orientation seems a stronger mediating role in depressive symptoms with both male and female, but especially for female. Impersonal orientation was found to be partially mediating in the relationship between avoidant attachment and depressive symptoms, but its role was significant only for the male subgroup and not for female participants. Moreover, controlled orientation did not play a significant role in any relationship in the general analysis, whereas for male only, it had a partial mediating role in the relationship between avoidant attachment and depression, negatively.

In the literature, female with insecure attachment are more likely to be depressed than male (Dagnino et al., 2017; Weissman & Klerman, 1977). However, the results showed that while male with avoidant attachment and impersonal orientation/control orientation are likely to be more depressed, the same is not true for female. According to this result, it is thought that the effect of another mediator or regulatory variable, related with gender factor, might be an effect in this relationship. This study was conducted with university students, and it is known that social support perceived from family and friends in university students is higher in female than in men (Canty-Mitchell & Zimet, 2000). E.g, Perceived social support is a crucial predictor of depression in female university students (Burnette et al., 2009; Kadir & Bifulco, 2013). In accordance with these findings, the perceived social support variable at the scope

of this work has not been studied, but it is highly recommended an examination of its effect in subsequent studies.

Secondly, it was investigated at whether the partial mediating role of causality orientations in the relationship between both anxious and avoidant attachment styles with OCD symptomology varied by gender. While controlled orientation was observed to be a partial mediator solely in female participants, impersonal orientation was a partial mediator for both genders with regard to the relationship between OCD symptomology and both anxious and avoidant attachment styles. Autonomous orientation was not any partial mediator role in this relationship. General causality orientations are trait-like characteristics reflective of an individual's belief about their ability to promote or cause change (Deci & Ryan, 1985b). On the contrary, individuals diagnosed with OCD are strictly adherent to their rituals, behaviors are highly resistant to change, and tend to reduce their anxiety by displaying repetitive behaviors Doron et al. (2009). In the literature, there was no study on the levels of OCD and general causality, which would allow the comparison of the findings obtained in this study. The relationship between the two variables (OCD and GCOS) can be more understandable by examined in detail in future studies in areas such as cognitive flexibility, motivation, mindfulness and self-regulation.

Finally, it has been studied whether the partial mediating role of causality orientations in the relationship between both anxious and avoidant attachment styles with general psychological symptoms varied by gender. As a result of this study, it was found that the partial mediating role of autonomous orientation in the relationship only between avoidant attachment and general psychological symptoms varied by gender, not avoidant. The findings of this study showed that autonomy orientation seems a stranger mediating role in general psychological symptoms with both male and female, but especially for male. While controlled orientation was observed to be a partial mediator solely in female participants, impersonal orientation was a partial mediator for both genders with regard to the relationship between general psychological symptoms and both anxious and avoidant attachment styles.

A detailed analysis of gender subgroups demonstrated a partial mediating role for autonomous orientation between avoidant attachment and general psychological symptoms. While both male and female having avoidant attachment styles directed by an autonomous orientation experienced lower levels of psychopathological symptoms, female with anxious attachment also experienced higher levels of general psychological symptoms when they scored more highly on controlled orientation. However, impersonal orientation was observed to play a partial mediating role for psychopathological symptoms, reaching significance both within each gender and between both genders considered collectively.

Conclusion

Considering the findings of this study, it can be deduced that individuals with an insecure attachment pattern who attribute their behaviors to external sources tend to be more vulnerable to psychopathological symptoms. Especially, impersonal orientation was an important partial mediator between insecure attachment (both anxious and avoidant) and psychopathological symptoms (OCD symptomology, depressive symptoms, and general psychological symptoms). Additionally, control oriented individuals having anxious attachment was found to be an elevated tendency to experience OCD symptomology and general psychological symptoms, but no significant difference was found for the avoidant attachment style. Individuals with anxious attachment combined with an autonomous orientation was not any significant mediating role with psychopathological symptoms (OCD symptomology, depressive symptoms, and general psychological symptoms); but autonomous oriented individuals with anxious attachment was found to be an elevated tendency to experience depressive symptoms and general psychological symptoms. Autonomous orientation was not found to be a partial mediator of the relationship between the both avoidant and anxious attachment types and OCD symptomology.

Limitations and future directions

It is known that individual interviews for attachment measurement and various applications for general causality orientations can be made. However, with such a large sample, it was not possible to take precise measurements based on individual application as described. Because of the study was based on self-reports, gender equality was not achieved and the ratio of male to female was insufficiently balanced to compare the data by gender. Although the sample for male is tried to be expanded with back up applications, this effort could not be completely accomplished because of the not enough voluntary participant. Owing to this factor analyses for each gender were performed separately. Balancing the number of male and female will provide an opportunity for comparison and also broaden the study and enable comparative studies about gender in future research.

One of the limitation of the study tested individuals from universities in major and minor cities in Turkey, participants to only a single age and educational group restricts the generalizability of our findings. Thus, both age and educational levels are limited, and results in a limited in Turkish sample. The model tested in a very homogeneous group should also be tested in children, adolescents and the elderly. However, as a transition from puberty to adulthood this age group is thought to be representing of an important part of society (Deci & Ryan, 2016). Similarly, it is useful to test the findings in patient groups in order to gain in-depth information

and make comparisons. The study was conducted with non-clinical group. The main aim of the study was to investigate risk factors and determine possible actions for preventive health services. To achieve this purpose, we planned to reach a large sample and increase generalizability of our results. In order to expand the scope of study, non-diagnosed students from seven different region of the country have been incorporated into the study. It would be benefit from including clinical samples in future studies, as deeper insights can be gained from clinical investigations. Future studies conducted with clinical groups can offer comparisons, so in addition to this work. As it is now, the results of our study might suggest new programs that universities could manage and implement in mental healthcare centers for students.

Furthermore, this study was designed and implemented from the perspective of Self Determination Theory, and so it examined the role that general causality orientation plays in mediating the relationship of different attachment styles with depression, OCD, and general psychological symptoms, with respect to autonomous, controlled, and impersonal orientations. Model development monitoring was used and therefore, a model which was thought to be theoretically appropriate was tested while depends on the framework of self-determination theory. However, future studies should also use alternative models to address different possible explanations and to assess how causal orientations play a role in accordance with the nature of the Determination Self Determination Theory. There is a potential for new personality studies in this direction. As expected from the literature, model was confirmed for undergraduate students in Turkey. General causality orientation has been reported to differ from other personality traits, but has not been studied in comparison to them. General causality orientations should be studied in comparison with the other personality theories in the literature.

When evaluated the findings of the first study (Dağ & Şen, 2018) and the findings that are obtained here, it could be concluded that general causality orientations is an important variable in the relationship between attachment and psychopathology. In summary, it can be said that the general causality orientation variable plays a remarkable role in the relationship between attachment and psychopathology for future studies.

Compliance with Ethical Standards

Informed consent was obtained from all individual participants included in the study. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964

Helsinki declaration and its later amendments or comparable ethical standards. The authors declare that they have no conflict of interest.

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Competing Interests

The authors have declared that no competing interests exist.

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Appendixes

Table 3.

Regression and Path Analysis of General Causality Orientations with Attachment Styles and Psychopathological Symptoms

Mediator (GCOS) Variable: Sub-dimension of Attachment Styles																		
	Effects	s of media	ator varia	ble on pr	edicted var	able (Psycholo	ogical Sy	mptoms)										
	Depre	ssive sym	ptoms				OCD s	symptomo	ology				Gener	al Psycho	ological S	Symptom		
	Α	b	С	c'	Sobel test	Total variance	Α	b	С	c'	Sobel test	Total variance	а	b	С	c,	Sobel test	Total variance
Anxious attach	ment																	
Autonomous orientation	.00	17*	.35*	16*	-	None	.00	06	.32*	05	-	None	.00	10*	.45*	10*	-	None
Control orientation	.17*	.04	.35*	.04*	-	None	.17*	.20*	.31*	.16*	3.61**	Partial mediating (12%)	.17*	.13*	.45*	.06*	-	None
Impersonal orientation	.39*	.34*	.35*	.24	-	None	.39*	.29*	.31*	.20*	6.91**	Partial mediating (13%)	.39*	.37*	.36*	.23*	8.05**	Partial mediating (25%)
Avoidant attach	nment											(1070)						(2070)
Autonomous orientation	16*	17*	20*	.02*	-3.20*	Partial mediating (6%)	16*	.06	.17*	03*	-	None	16*	.10*	.15*	08*	-2.44**	Partial mediating (3%)
Control orientation	.01	.04	.20*	.04*	-	None	.01	.20*	.17*	.20*	-	None	.01	.13*	.16*	.13*	-	None
Impersonal orientation	.24*	.34*	.20*	.12*	5.66**	Partial mediating (13%)	.24*	.30*	.17*	.10*	5.22**	Partial mediating (10%)	.24*	.37*	.17*	.08*	5.82**	Partial mediating (14%)

^{*}p<.05, **p<.01



Table 4.

The Summary of Path Analysis for General Causality Orientations by Gender

Predicting	Effects of mediator variable on predicted variable (Psychological Symptoms)																	
variable:						OCD s	OCD symptomology						General Psychological Symptom					
Attachment	Α	b	С	C'	Sobel	Total	а	b	С	C'	Sobel	Total	а	b	С	C'	Sobel	Total
Styles					test	variance					test	variance					test	variance
Autonomy ori	ientation																	
Female																		
Anxious	06	05	.39*	.37*	0.79	None	06	07	.33*	.33*	0.98	None	06	08	.47*	.46*	1.04	None
Avoidant	20*	05	.20*	18*	0.65	None	20*	07	.17*	.16*	1.63	None	20*	12	.15*	.14*	1.89*	Partial mediating
Male																		
Anxious	.11	12*	.26*	28*	-1.42	None	.11	10	.26*	.28*	-1.05	None	.11	16*	.40*	.42	-1.30	None
Avoidant	20*	12*	.22*	19*	2.06*	Partial mediating	20*	10	.14*	.12	1.25	None	20*	16*	.20*	.17*	2.59*	Partial mediating
Control orient	tation					_												_
Female																		
Anxious	.15*	.06	.39*	.00	1.42	None	15*	.23*	.33*	.30*	3.04**	Partial mediating	.15*	.13*	.47*	46*	2.37**	Partial mediating
Avoidant Male	-02	.06	.20*	.06	0.53	None	.02	.23*	.17*	.16*	0.57	None	-02	.13*	.15*	15*	0.56	None
Anxious	.21*	02	.26	08	-0.36	None	21*	.13	.26*	.24*	1.55	None	.21*	.12	.40*	39*	1.43	None
Avoidant	03	02	.22*	01	-0.93	None	03	.13	.14*	.14*	-1.70	None	03	.12	.20*	.21*	-1.54	None
İmpersonal or	rientatio	n																
Female																		
Anxious	.43*	.37*	.39*	.25*	2.29*	Partial mediating	.43*	.33*	.33*	.23*	6.77**	Partial mediating	.43*	.41*	.47*	.36*	7.79**	Partial mediating
Avoidant	.18*	.37*	.20*	.11*	2.50*	Partial mediating	.18*	.33*	.17*	.08*	4.30**	Partial mediating	.18*	.41*	.15*	.05*	5.65**	Partial mediating
Male												3						
Anxious	.29*	.25*	.26*	.20*	2.72**	Partial mediating	.29*	.19*	.26*	.22*	2.13*	Partial mediating	.29*	.26*	.40*	.35*	2.70**	Partial mediating
Avoidant	.27*	.25*	.22*	.17*	2.07*	Partial mediating	.27*	.19*	.14*	.11*	2.02*	Partial mediating	.27*	.26*	.20*	.16*	2.06*	Partial mediating

^{*}p<.05, **p<.01



Table 5.

Index of Compliance Measured by Structural Equation Modeling (N = 750, female = 558, male = 192)

Predicted variable	χ2	GFI	AGFI	NFI	CFI	RMSEA
Female						
Depression	χ2 (16, N=558)=73.345	0.93	0.91	0.90	0.93	0.068
OCD	χ2 (28, N=558)=63.876	0.94	0.94	0.92	0.94	0.062
General Psychological Symptoms	χ2 (31, N=558)=128.665	0.96	0.97	0.94	0.96	0.071
Whole model	χ2 (27, N=558)=364.785	0.97	0.98	0.95	0.97	0.087
Male						
Depression	χ2 (19, N=192)=172.863	0.92	0.92	0.93	0.94	0.062
OCD	χ2 (29, N=192)=161.532	0.92	0.93	0.91	0.92	0.069
General Psychological Symptoms	χ2 (33, N=192)=127.314	0.93	0.95	0.93	0.95	0.073
Whole model	χ2 (30, N=192)=340.642	0.96	0.99	0.95	0.97	0.086

Note. For all χ2 tests p < .001.

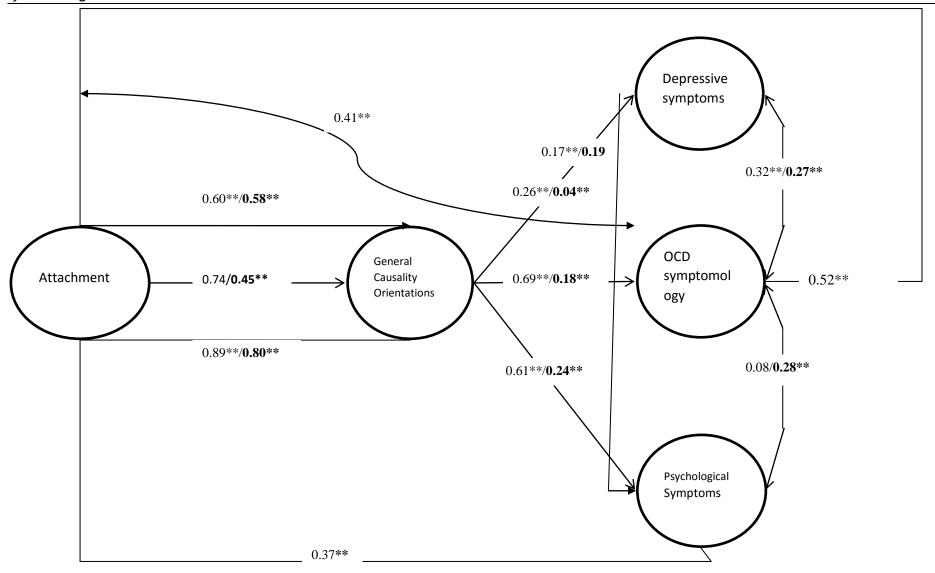


Figure 1. Structural Equation Modeling for General Causality Orientations. N.B. Boldfaced significant values relate to the final data obtained when the model is tested, and other significant values relate to tests between specific variable

