T.R. USKUDAR UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF NEUROSCIENCE

M.Sc. in NEUROSCIENCE (ENG.)

MASTER'S THESIS

PSYCHOLOGICAL MANIPULATION AND OBSESSION IN ROMANTIC RELATIONSHIPS: EXAMINING THE ROLE OF COGNITIVE ATTENTIONAL SYNDROME

ASLIHAN KARAKUŞ

Thesis Advisor

Assoc. Prof. Dr. Kaan YILANCIOĞLU

ISTANBUL - 2025

T.R. USKUDAR UNIVERSITY

INSTITUTE OF HEALTH SCIENCES

DEPARTMENT OF NEUROSCIENCE

M.Sc. in NEUROSCIENCE (ENG.)

MASTER'S THESIS

PSYCHOLOGICAL MANIPULATION AND OBSESSION IN ROMANTIC RELATIONSHIPS: EXAMINING THE ROLE OF COGNITIVE ATTENTIONAL SYNDROME

ASLIHAN KARAKUŞ

Thesis Advisor

Assoc. Prof. Dr. Kaan YILANCIOĞLU

ISTANBUL - 2025

ÖZET

ROMANTİK İLİŞKİLERDE PSİKOLOJİK MANİPÜLASYON VE TAKINTI: BİLİŞSEL DİKKAT ROLÜNÜN İNCELENMESİ

Bu çalışmanın amacı romantik ilişkilerde ortaya çıkabilen psikolojik manipülasyon ve takıntılı davranışların altında yatan bilişsel süreçleri ve bu süreçlerin Bilişsel Dikkat Sendromu (BDS-1) ile ilişkisini incelemektir. 271 kişinin katıldığı klinik olmayan örneklem ile çalışma yürütülmüştür. Makyavelizm (MACH-IV), Partnere İlişkin Obsesif Kompulsif Belirti Ölçeği (PİOKBÖ), Romantik İlişki Obsesif Kompulsiyonları Ölçeği (RİOKÖ), Yakın İlişkilerde Yaşantılar Envanteri (Kaygılı ve Kaçıngan Bağlanma) (YİYE II) ve Bilişsel Dikkat Sendromu (BDS-1) ölçekleri katılımcılara uygulanmıştır. SPSS 30.0 programı ile betimsel istatistikler, geçerlik ve güvenirlik analizleri, normal dağılım testleri, Spearman korelasyon analizleri, çoklu ve hiyerarşik regresyon testleri kullanılmış ve aracılık etkisi PROCESS makrosu aracılığıyla Model 4 ile test edilmiştir ve analiz edilmiştir. Bulgular, Makyavelist eğilimlerin BDS'da anlamlı bir negatif yordayıcı olduğunu, BDS'un ise hem partner odaklı takıntıyı (PİOKBÖ) hem de ilişki obsesif-kompulsif semptomlarını (RİOKÖ) anlamlı şekilde yordadığını göstermiştir. Hiyerarşik regresyon sonucunda, Makyavelistlik ve PİOKBÖ, RİOKÖ değişkenini anlamlı şekilde yordarken, sunulan varyans, BDS'un modele eklenmesiyle anlamlı şekilde artmıştır. PROCESS analizi, Makyavelistlik eğilimlerin ve RİOKÖ arasındaki ilişkide BDS'un kısmi aracılık etkisini doğrulamıştır. Bu bulgular, Bilişsel Dikkat Sendromunun, manipülatif kişilik eğilimleri ile romantik ilişkilerde obsesif davranışlar arasında aracı işlev gördüğünü ortaya koymaktadır. Analiz sonuçları baz alındığında, metakognitif süreçlerin romantik ilişkilerdeki yıkıcı davranışları anlamak ve terapötik müdahalelerde bunlar üzerinde durmanın önemli olduğunu göstermektedir. Bu bağlamda, özellikle metakognitif temelli psikoterapi yaklaşımlarının manipülasyon, obsesyon ve kompulsiyonları azaltmada etkili olabileceği öne sürülmektedir.

Kelimeler: *Romantik ilişkiler, psikolojik manipülasyon, takıntı, Bilişsel Dikkat Sendromu, Makyavelizm*

ABSTRACT

PSYCHOLOGICAL MANIPULATION AND OBSESSION IN ROMANTIC RELATIONSHIPS: EXAMINING THE ROLE OF COGNITIVE ATTENTIONAL SYNDROME

This study aims to examine the cognitive processes underlying psychological manipulation and obsessive behaviors that occur in romantic relationships and, in particular, to evaluate the mediating role of Cognitive Attentional Syndrome (CAS-1). The study was conducted with a non-clinical sample of 271 adult individuals. Machiavellianism (MACH-IV), Partner-Related Obsessive-Compulsive Symptoms Inventory (PROCSI), Relationship Obsessive-Compulsive Inventory (ROCI), Experiences in Close Relationships (Anxious and Avoidant Attachment) (ECR-R), and Cognitive Attentional Syndrome (CAS-1) scales were utilized with the participants. SPSS 30.0 software was used in statistical analysis; descriptive statistics, validity and reliability, normal distribution tests, Spearman's correlation analyses, multiple and hierarchical regression analyses conducted, and the mediating effect was tested with Model 4 via the PROCESS macro. The findings indicated that Machiavellian tendencies were a significant negative predictor in CAS, while CAS significantly predicted both partner-focused obsession (PROCSI) and relationship obsessive-compulsive symptoms (ROCI). As a result of the hierarchical regression, Machiavellianism and PROCSI significantly predicted the ROCI variable, while the presented variance increased significantly with the obtainment of CAS to the model. PROCESS analysis confirmed the partial mediating effect of CAS in the relationship between Machiavellianism and ROCI. These findings reveal that Cognitive Attentional Syndrome functions as a transdiagnostic mechanism in the relationship between manipulative personality tendencies and relational dysfunctional behaviors. The analysis results demonstrate that metacognitive processes are essential to comprehending maladaptive behaviors in romantic relationships and targeting them in therapeutic interventions. In this context, it is suggested that metacognitive-based psychotherapy approaches in particular may be effective in reducing manipulation and obsessive-compulsive behaviors.

Keywords: *Romantic relationships, psychological manipulation, obsessive behaviors, Cognitive Attentional Syndrome, Machiavellianism*

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my esteemed advisor, **Assoc. Prof. Dr. Kaan YILANCIOĞLU**, whose guidance, knowledge, and support have been invaluable throughout the preparation of this thesis. His patience, academic rigor, and constructive feedback played a crucial role in shaping this study.

I also extend my sincere thanks to **Prof. Dr. Türker Tekin ERGÜZEL** from the Institute of Health Sciences, whose academic vision and insightful contributions have significantly enriched my educational journey and inspired me during my studies.

I am grateful to all the faculty members of the **Institute of Health Sciences at Üsküdar University**, who have supported my academic development with their knowledge, experience, and encouragement.

My heartfelt thanks go to my beloved family, whose unconditional love and support have been a constant source of strength. I would especially like to thank my dear mother **Zehra Karakuş**, my dear father **Mehmet Ali Karakuş**, and my beloved sister **Büşra Karakuş**. Their unwavering faith in me, patience, and emotional support made it possible for me to persevere throughout this academic journey. Their presence has always been my greatest motivation.

I would also like to thank all the individuals who voluntarily participated in my research, as well as the institutions that supported the data collection process.

This thesis is not only an academic endeavor, but also the outcome of dedication, belief, love, and collaboration. It reflects the invaluable contributions of all the people who have touched my life throughout this process. I am genuinely grateful to each and every one of them.

With sincere gratitude,

Aslıhan Karakuş

DECLARATION

I hereby declare that this study is titled **"Psychological Manipulation and Obsession in Romantic Relationships: Examining the Role of Cognitive Attentional Syndrome"** my own thesis study, that I have no unethical behavior at any stage from planning to writing, that I have obtained all the information in the thesis within academic and ethical rules, and that I resource all the information and comments that are not obtained through the thesis study.

18.06.2025

ASLIHAN KARAKUŞ

TABLE OF CONTENTS

ÖZET ..... **i**
ABSTRACT ..... **ii**
ACKNOWLEDGEMENT ..... **iii**
DECLARATION ..... **iv**
TABLE OF CONTENTS ..... **v**
LIST OF TABLES ..... **ix**
LIST OF ABBREVIATIONS AND SYMBOLS ..... **xi**
1. INTRODUCTION **1**
1.1. Purpose of the Study 3
1.1.1. Hypotheses 3
1.1.2. Research Questions 4
2. GENERAL INFORMATION **5**
2.1. Romantic Love 5
2.1.2. Romantic Jealousy 7
2.2. Obsessive-Compulsive Disorder (OCD) 8
2.2.1. Neurobiological Basis of OCD 9
2.2.2. Obsessive Compulsive Disorder (OCD) and Relationship Obsessive Compulsive Disorder (ROCD) 10
2.2.3. Relationship Obsessive-Compulsive Disorder (ROCD) 11
2.2.4. Rumination 13
2.3. Attachment System in Romantic Relationships 14
2.3.1. Avoidant Attachment in Romantic Relationships 16
2.3.2. Anxious Attachment in Romantic Relationships 16
2.3.4. Oxytocin and Romantic Attachment 18
2.4. Machiavellianism 19
2.4.1. Machiavellianism and Gender 20
2.4.2. Psychological/Emotional Manipulation 21
2.5. Cognitive Attentional Syndrome (CAS) 23
3. METHOD AND MATERIALS **26**
3.1. Research Study 26
3.2. Research Model 26

3.3. Study Population and Sampling Method 26
3.4. Inclusion and Exclusion Criteria 26
3.5. Participants 27
3.6. Assessment Tools and Techniques 27
3.6.1. Sociodemographic Form 27
3.6.2. MACH-IV test of Machiavellianism 28
3.6.3. Relationship Obsessive Compulsive Inventory (ROCI) 28
3.6.4. Partner Related Obsessive Compulsive Symptom Inventory (PROCSI) 28
3.6.5. Experiences in Close Relationships Inventory (ECR-R) 29
3.6.6. Cognitive-attentional Syndrome Questionnaire (CAS-1) 29
3.6.7. Analysis of Data 29
4. RESULTS 30
4.1. Reliability Analysis 31
4.1.1. Internal Consistency of MACH–IV 31
4.1.2. Internal Consistency of ROCI 32
4.1.3. Internal Consistency of PROCSI 32
4.1.4. Internal Consistency of ECR-Revised 32
4.1.5 Internal Consistency of CAS-1 33
4.2. Exploratory Factor Analysis (EFA) 34
4.2.1. Exploratory Factor Analysis (EFA) for MACH IV 34
4.2.2. Exploratory Factor Analysis (EFA) for ROCI 35
4.2.3. Exploratory Factor Analysis (EFA) for PROCSI 35
4.2.4. Exploratory Factor Analysis (EFA) for ECR-R 36
4.2.5. Exploratory Factor Analysis (EFA) for CAS-1 37
4.3. Descriptive Statistics 37
4.3.1. Descriptive Statistics for MACH IV 38
4.3.2. Descriptive Statistics for CAS-1 38
4.3.4. Descriptive Statistics for PROCSI 39
4.3.5. Descriptive Statistics for ROCI 39
4.3.6. Descriptive Statistics for ECR-R 40
4.4. Normality Tests 41
4.4.1. Test for Normality for MACH IV 41
4.4.2. Test for Normality for CAS-1 41

4.4.4. Test for Normality for ECR-R 42
4.4.6. Test for Normality for PROCSI 43
4.4.7. Test for Normality for ROCI 43
4.5. Independent Samples Test 43
4.5.1. Independent Samples T-test for MACH IV 43
4.6. Mann–Whitney U Test 44
4.6.1. Mann–Whitney U Test for ROCI 44
4.6.2. Mann-Whitney U Test for PROCSI 44
4.6.3. Mann-Whitney U Test for ECR-R 45
4.6.4. Mann-Whitney U Test for CAS-1 46
4.6.4.1. Mann-Whitney U Test for CAS-1 – Metacognitive Beliefs 46
4.7. Nonparametric Correlations 47
4.7.1. Spearman's Rho Correlations for CAS-1 & ROCI 47
4.7.2. Spearman's Rho Correlations for CAS-1 & PROCSI 47
4.7.3. Spearman's Rho Correlations for CAS-1 & MACH 48
4.7.4. Spearman's Rho Correlations for CAS-1 & ECR-R 48
4.7.5. Spearman's Rho Correlations for ROCI & PROCSI 48
4.7.6. Spearman's Rho Correlations for ROCI & ECR-R 48
4.7.7. Spearman's Rho Correlations for PROCSI & ECR-R 49
4.7.8. Spearman's Rho Correlations for MACH IV & ECR-R 49
4.7.9. Spearman's Rho Correlations for MACH IV & ROCI, and PROCSI 49
4.7.10. Spearman's Rho Correlations for CAS-1 Subscales 49
4.7.11. Spearman's Rho Correlations for ECR-R Subscales 50
4.8. Regression 50
4.8.1. Simple Linear Regression 50
4.8.2. Multiple Regression 55
4.8.3. Hierarchical Regression 59
4.9. Mediating Effect Analysis 66
4.9.1. Mediating Effect Analysis for ECR_ANX → CAS_MCB → PROCSI 66
4.9.2. Mediating Effect Analysis for ECR_ANX → CAS_CBS → PROCSI 67
4.9.3. Mediating Effect Analysis for ECR_ANX → CAS_MCB → ROCI 68
4.9.4. Mediating Effect Analysis for ECR_ANX → CAS_CBS → ROCI 69
4.9.5. Mediating Effect Analysis for MACH → CAS_MCB → PROCSI 70

4.9.6. Mediating Effect Analysis for MACH → CAS_CBS → PROCSI 71
4.9.7. Mediating Effect Analysis for MACH → CAS_MCB → ROCI 73
4.9.8. Mediating Effect Analysis for MACH → CAS_CBS → ROCI..... 74
5. DISCUSSION 76
6. CONCLUSION AND RECOMMENDATIONS 84
REFERENCES..... 87
APPENDICES 98

LIST OF TABLES

Table 1. Demographic characteristics of the participant 30
Table 2. Internal consistency coefficients (Cronbach's Alpha) of the Scales 31
Table 3. Exploratory factor analysis (EFA) of Scales 34
Table 4. The Descriptive statistics analysis and normality test results of the scales. 37
Table 5. Test of Normality for Scales 41
Table 6. Mann–Whitney U Test for ROCI 44
Table 7. Mann–Whitney U Test for PROCSI 44
Table 8. Mann–Whitney U Test for ECR-R/Avoidant Attachment 45
Table 9. Mann-Whitney U Test for ECR-R/Anxious Attachment 45
Table 10. Mann-Whitney U Test for CAS-1 – Metacognitive Beliefs 46
Table 11. Mann-Whitney U Test for CAS-1 – Cognitive Behavioral Strategies 46
Table 12. Spearman's Rho Correlations 47
Table 13. Simple linear regression for CAS-1 Subscales (CBS & MCB) 50
Table 14. Simple linear regression for MACH & ROCI 51
Table 15. Simple linear regression for MACH & PROCSI 52
Table 16. Simple linear regression for MACH & CAS-1_CBS 53
Table 17. Simple linear regression for MACH & CAS-1_MCB 54
Table 18. Multiple & simple linear regression for CAS-1 (MCB & CBS) & ROCI 55
Table 19. Multiple linear regression for CAS-1 (CBS &CBS) & PROCSI 56
Table 20. Multiple regression for ROCI & ECR-R (AVOID & ANX) 57
Table 21. Multiple regression for PROCSI & ECR-R (AVOID & ANX) 58
Table 22. Hierarchical multiple regression for CAS-1, MACH, and ROCI 59
Table 23. Hierarchical multiple regression for CAS-1, MACH, and PROCSI 60
Table 24. Hierarchical multiple regression for CAS-1, MACH, ECR-R, and PROCSI. 62
Table 25. Hierarchical multiple regression for CAS-1, MACH, ECR-R, and ROCI 64
Table 26. Mediating effect for ECR_ANX, CAS_MCB, and PROCSI 66
Table 27. Mediating effect for ECR_ANX, CAS_CBS, and PROCSI 67
Table 28. Mediating effect for ECR_ANX, CAS_MCB, and ROCI 68
Table 29. Mediating effect for ECR_ANX, CAS_CBS, and ROCI 69
Table 30. Mediating effect for MACH, CAS_MCB, and PROCSI 70
Table 31. Mediating effect for MACH, CAS_CBS, and PROCSI 71

Table 32. Mediating effect for MACH, CAS_MCB, and ROCI 73
Table 33. Mediating effect for MACH, CAS_CBS, and ROCI..... 74

LIST OF ABBREVIATIONS AND SYMBOLS

OCD – Obsessive-Compulsive Disorder

MACH – Machiavellianism

ROCD – Relationship Obsessive Compulsive Disorder

CAS – Cognitive-Attentional Syndrome

MACH-IV – test of Machiavellianism

ROCI – Relationship Obsessive Compulsive Inventory

PROCSI – Partner Related Obsessive Compulsive Symptom Inventory

ECR-R – Experiences in Close Relationships Inventory

ECR_ANX – Anxious Attachment

ECR_AVOID – Avoidant Attachment

CAS-1 – Cognitive-attentional Syndrome Questionnaire 1

CBS – Cognitive Behavioral Strategies

MCB – Metacognitive Beliefs

→ – Directional effect in mediation models

1. INTRODUCTION

According to the American Psychiatric Association (APA, 2013), obsessive-compulsive disorder is a common, severely damaging psychiatric disorder that features obsessions and compulsions. The disorder consists primarily of obsessions (intrusive thoughts that cause anxiety) and compulsions (repetitive ritual-like behaviors intended to alleviate the resulting anxiety) (Stein, 2002). Obsessiveness in close relationships has become a matter of increasing interest and the focus of numerous (i.e., theoretical, empirical) studies (Doron, Derby, & Szepsenwol, 2014). That obsessive concern is called Relationship Obsessive Disorder (ROCD; Doron, Derby, et al., 2014; Doron, Derby, Szepsenwol, & Talmor, 2012a, 2012b). People with Obsessive-Compulsive Disorder have some dysfunction in romantic relationships, less interest in marriage, and higher tension about marriage than the public (Emmelkamp, de Haan, & Hoogduin, 1990; Rasmussen & Eisen, 1992; Riggs, Hiss, & Foa, 1992). In every romantic relationship, there can be disagreements, worries, and distrust, and in general, relationship obsessive-compulsive disorder can originate, and actions and manners can arise during all of these processes while flirting, dating, or at the beginning of the commitment. So, diagnosing the relationship obsessive-compulsive disorder can be a demanding case under these circumstances (Doron et al., 2016; Doron et al., 2014). Some of the markers of relationship obsessive-compulsive disorder enclose suspicions and confusion about one's suitability for one's partner (such as emotional intensity), whether the relationship is suitable, and how one's partner's emotions are perceived. These mentioned markers are called relationship-centered obsessive-compulsive disorder signs (Gorelik et al., 2023).

Machiavellianism is defined by behaviors in social settings that involve manipulating people through deceit or taffy to attain personal gain or a distinct purpose (Jones & Paulhus, 2009). Desire to influence someone, emotional independence, and suspicion are aspects of Machiavellianism (Christie & Geis, 1970; Vecchio & Sussman, 1991) and have an impact on the continuity and quality of the affinity and the interest in the mate. Behaviors such as punishing a person without employing physical force, controlling them, and isolating them with dread and mortification are called emotional abuse (Engel, 2002). Controlling, isolating, pressuring, verbally humiliating, and humiliating by using a person's personal information are likewise conducts utilized in this abuse (Follingstad, Coyne, & Gambone, 2005). According to Glaser (2002), continuous exposure to emotional abuse yields in-depth impairment and obtains some psychological concerns.

Neuroimage studies by Bereczkei (2018) support that Machiavellian intelligence is a type specific to people. These studies have shown that Machiavellian behaviors, such as surviving and using others for their benefit, are associated with high cognitive capacities. According to the findings obtained as a result of neurological studies, high neural activities have been observed in some parts of Machiavellians' brains (e.g., thalamus, middle frontal & cingulated gyrus), and this may show how they can manipulate people in social settings (Bereczkei, Deak, Papp, Perlaki, & Orsi, 2013).

A person's prior relationships and character features are critical in romantic love studies to comprehend why they fall in love and choose a person in particular (Berscheid, 2010; Brumbaugh and Fraley, 2006; Campbell et al., 2005). According to the Hazan and Shaver romantic love is the biological and social rotation through which adults' bond in romantic relationships, considered as an attachment, such as the emotional bonds that develop between parents and their infants early in life (Hazan & Shaver, 1987, p. 511). A person's life experiences, and the meanings attributed to them are a series of features acquired as a result of their attachment style (Young, Klosko, & Weisharr, 2003). Positive feelings such as joy come with attachment if the attachment is secure and the bond is held (Ward et al., 1996). According to Marshall et al. (2000), if a person is insecurely attached, this person might have inadequate coping skills when dealing with problems. Ward et al. (1996) suggest that the basis of attachment is laid by relationships initiated with primary caretakers in the early years of life. Whether a person is worthy, valuable, or worthless to others is shaped by the basis of attachment he/she developed during this time. Attachment avoidance and attachment anxiety constitute insecure attachment sorts in adults (Brennan et al., 1998; Fraley & Waller, 1988). Additionally, they proposed that the attachment system may act to restrain feelings to determine whether invasive ideas turn into obsessions during adulthood (Doron and Kyrios, 2005; Doron, 2020).

Wells describes the metacognitive theory that concerns people's thinking and suggests the problem is related to their rigid and repetitious reactions to negative thoughts, beliefs, and emotions (Wells, 2000). Wells stated this form of consideration is known as a cognitive attentional syndrome (CAS), characterized by repetitive patterns of thinking, such as anxiousness and rumination, and maladaptive control strategies, such as suppressing thoughts (Wells, 2000). Within the context of metacognitive theory, the cognitive attentional syndrome model is especially based on some mental diseases (such as PTSD, OCD, anxiety disorders, and depression) (Wells, 2008).

1.1. Purpose of the Study

The purpose of this research is to examine manipulation and obsessions in romantic relationships within the scope of Cognitive Attentional Syndrome. Within the scope of this purpose, the following questions and hypotheses were examined, and answers were sought in this study.

1.1.1. Hypotheses

H_1: There is a significant correlation between Machiavellianism (MACH) tendencies, Cognitive Attentional Syndrome, and obsessive-compulsive symptoms toward romantic relationships (ROCI) and partner (PROCSI).

H_2: Machiavellian traits (MACH) and the components of Cognitive Attentional Syndrome (CAS), including cognitive-behavioral strategies and metacognitive beliefs, significantly predict the severity of obsessive-compulsive symptoms related to romantic relationships (ROCI) and partner-related symptoms (PROCSI).

H_3: Attachment styles (ECR-R; Avoidant and Anxious Attachment) predict obsessive-compulsive symptoms toward romantic relationships (ROCI) and partner (PROCSI).

H_4: Attachment styles (ECR-R; Avoidant and Anxious Attachment) are positively associated with obsessive-compulsive symptoms toward romantic relationships (ROCI) and partner (PROCSI).

H_5: Cognitive Attentional Syndrome (CAS_CBS & CAS_MCB) mediate between Machiavellian (MACH) tendencies and obsessive-compulsive symptoms toward romantic relationships (ROCI) and partner (PROCSI).

H_6: Attachment styles (ECR-R; Avoidant and Anxious Attachment) predict levels of cognitive attentional syndrome (CAS_CBS & CAS_MCB) and obsessive-compulsive symptoms toward romantic relationships (ROCI) and partner (PROCSI).

1.1.2. Research Questions

1. What role do Machiavellian tendencies play in the relationship between partner-related obsessive-compulsive symptoms and romantic relationship obsessions?

2. Does cognitive attentional syndrome (CAS) play a mediator role between individuals' Machiavellian traits and their tendency to develop obsessions in romantic relationships?

3. Do individuals' obsessive-compulsive symptoms toward their partners (PROCSI) significantly predict their levels of romantic relationship obsession?

4. How do individuals' attachment styles (anxious and avoidant attachment) relate to their cognitive attentional syndrome?

5. Is Machiavellian personality structure a significant predictor of individuals' tendencies toward cognitive attentional syndrome?

6. Do partner-related obsessive-compulsive symptoms (PROCSI) significantly increase the variance in cognitive attentional syndrome (CAS)?

7. Does the likelihood of experiencing obsession in romantic relationships increase as cognitive attentional syndrome levels increase?

8. Do attachment styles (ECR-Anxiety and Avoidance Attachment) significantly predict romantic relationship obsessions (ROCI)?

9. Does Machiavellianism relate to individuals developing obsessive thoughts at the cognitive and behavioral levels in romantic relationships?

2. GENERAL INFORMATION

2.1. Romantic Love

According to current assertions of neuroscientists, fundamental emotions consist of separated neural circuits or systems. Suggesting that the brain's neural system developed to turn sentiment into actions and that humans and mammals have shared emotion and motivation circuits (Damasio, 1999; Davidson, 1994; Panksepp, 1998). Fisher (1998) suggests that the mammalian brain has a detached but related emotional motivation system (hypothesized to be lust, affiliation, and attraction) involved in parenting, mating, and reproduction. The desire to be sexually pleased, which is related to estrogen and androgen, demonstrates sexual drives like libido or lust. There is boosted energy and concentrated attention toward the chosen spouse, which defines the attraction system. Infatuated, limerence, obsessive, romantic, and passionate love collaborate with the attraction system in humans. Its characteristics include the desire for a passionate partnership with the mate, sincere feelings, and chafing ideas about the beloved object. Some studies reinforce the presence of this emotional state by demonstrating that central dopamine (DA) and norepinephrine (NE) tiers rise, and central serotonin (5-HT) tiers decline (Bartels & Zeki, 2000; Fisher, 1998; Wang et al., 1999).

Passionate and companionate love are deemed distinct kinds of love in considerable communities (Fehr, 1988; Fischer, Shaver, & Carnochan, 1990; Hatfield, Rapson, & Martel, 2007). Drastic sentiments (such as dread, covetousness, and longing) and feelings like lust, affection, and excitation constitute passionate love (Aron, Fisher, and Strong, 2006; Sternberg, 1997). Components such as closeness, sincerity, loyalty, dedication, and devotion comprise Companionate love (Fehr, 1988; Hendrick & Hendrick, 1989; Mikulincer & Goodman, 2006; Sternberg & Weis, 2007). Men and women may display romantic appeal in different ways. But they indicate romantic love with almost the same intensity (Hatfield & Rapson, 1996; Tennov, 1979). Emotional companionship, consolation, peace, and social mitigation are defined as companionate love in humans and constitute the bond between men and women. Oxytocin, vasopressin, and neuropeptides are mainly accountable for the neural rotations in this brain system (Carter, 1992; Carter, DeVries, & Getz, 1995; see also Pedersen, Caldwell, Jirikowsk, & Insel, 1992; Winslow et al., 1999). When viewpoints on love are estimated, it has been suggested that men see love as more passionate or romantic (Hatfield & Rapson, 1993; Hobart, 1958; Knox &

Sporakowski, 1968; Rubin, 1970). However, according to the examinations concentrated on sentiments, it has been found that women feel more romantic or passionate than men (Dion & Dion, 1973; Kanin, Davidson, & Scheck, 1970; Hatfield & Rapson, 1993).

2.1.1. Neurochemicals of Romantic Love

At the beginning of the relationship, people may feel uncontrollable admiration for their match (Tennov 1979; for a review; Fisher et al. 2016) and consider that the brain reward system supports that (Aron et al. 2005). That addictive, intense love (Fisher et al. 2016), thought to be driven by shifts in neurochemicals (Marazziti and Canale 2004), may evolve negligibly fierce over the term (Traupmann and Hatfield 1981; Sternberg 1986).

The hormones known for providing love and bonding within partners are oxytocin and vasopressin (Zeki, 2007). They are assembled in the hypothalamus (paraventricular and supraoptic nuclei), and the pituitary gland conducts them to participate in circulation (Debiec, 2007). These hormones, which likewise serve as neuropeptides, are little compounds that are involved in multiple pathways in the brain (Lim and Young, 2006). It is connected with romantic love and the dopamine-driven reward system, with oxytocin and vasopressin V1a receptors in many brain parts (Bartels and Zeki, 2004). The effects of these hormones on attachment and bonding are also related to dopamine, as dopamine antagonists can intercept these outcomes and initiate partner preference when there is no partner (Wang et al., 1999; Gingrich et al., 2000). Vasopressin induces stress fear responses, particularly avoidance behavior due to fearful experiences, while oxytocin has effects that reduce stress and anxiety (Carrasco and Van de Kar, 2003; Holmes et al., 2003). In addition to its effects as lessening stress, anxiety, and pain, oxytocin is likewise comprehended as the trust hormone because it initiates a sense of trust (Kéri and Kiss, 2011).

The dopamine pathways that play a role in love and coupling serve likewise to addictive conduct related to dopamine paths, so in numerous manners, love can be thought of as an addiction (Edwards and Self, 2006). Serotonin, a neurotransmitter, is a crucial factor in couples' bonds. Its level works inversely with corticosteroids (Tafet et al., 2001). Therefore, serotonin levels are predicted to decline in the earlier phases of love (Zeki, 2007). For love and the continuation of love, everyone can display some manners that can be considered abnormal, and this might be acceptable. While, when considered

pathologically, it is regarded that the individual with obsessive love concentrates excessively on the thing he or she is in love with (Fisher,1992; Liebowitz,1983). According to Fisher (2004), a person in love can be obsessed and have a desire to think overly much about the thing they are in love with. Central serotonin decline is a state noticed in numerous mental illnesses, which includes depression (Young and Leyton, 2002), anxiety disorder (Leonardo and Hen, 2006), and obsessive-compulsive disorder (Micallef and Blin, 2001). Obsessive-compulsive disorder symptoms and similar conditions can be seen in the first days of love, such as tension, nervousness, and intrusive thinking. For this reason, it may be pleasing to consider love as an obsessive disorder that occurs due to a decrease in serotonin, but while obsessive-compulsive disorder is included in DSM IV (Leckman et al., 2010), the first days of love are not.

2.1.2. Romantic Jealousy

Romantic jealousy, which is said to be a complex emotion inherent in human nature in intimate relationships, is also a crucial part of social life (Lanton, 1996). Jealousy can be defined as the emotional reactions of people in romantic relationships to real or unreal threats with the fear of losing something or the person they care about (Salovey and Rodin, 1985; White and Mullen, 1989). Jealousy often occurs as a reaction to actual or potential threats, such as losing a romantic partner, worrying about losing them, or no longer receiving their attention (Barelds & Barelds-Dijkstra, 2007; Dijkstra, Barelds, & Groothof, 2010). In general, most people experience jealousy in some way in their romantic relationships (Harris, 2009).

According to DSM-5, jealousy is classified in two ways: the first is obsessive jealousy, which is a disorder category defined as related to obsessive-compulsive disorder, and the other is jealousy within a delusional disorder (The American Psychiatric Association (APA), 2013). When considering obsessive jealousy, compulsive conduct aspires to ease the stress provoked by the attraction and contest between the person and their partner, who would be a romantic prospect for their partner (e.g., Kingham & Gordon, 2004; Rodriguez et al., 2015). White (1981) described romantic jealousy as a multifaceted combination of emotions, behaviors, and ideas that arise from the peril to the presence and rate of the relationship and self-esteem. Based on its scope, jealousy can arise from feelings such as worry and nervousness (loneliness), rage (treachery), and

despair (losing) (Hart et al., 2013). Mania is a love style in which one is doubtful about the partner's love and often responds emotionally in an obsessive way, and it is commonly considered that this sort of love is closely related to jealousy (White et al., 1989).

According to Pfeiffer and Wong (1989), jealousy can be categorized as jealousy involving emotional reactions of individuals to possible threats is emotional jealousy; jealousy because of thoughts about the partner's betrayal is known as cognitive jealousy, and jealousy based on observing the partner's behavior which is behavioral jealousy. Feeling romantically envious and dissatisfied in a romantic affinity is associated with rumination (Elphinston, Feeney, Noller, Connor, & Fitzgerald, 2013).

Based on the Emotion in Relationships model presented by Berscheid (1983), it is normal and acceptable to feel jealous if the partner is in a relationship with someone or if there is a possibility of having one (Berscheid, 1983). Based on this theory, contrary to belief, jealousy may not be considered an adverse emotional reaction if a situation such as losing someone you care about (Jorgensen et al., 2013). Concentrating on the closeness within the relationship is crucial for better understanding these reasonable predictions (Berscheid, Snyder, & Omoto, 1989).

The relationship closeness model, based on the dependence between partners, indicates when a partner in the relationship feels jealous. Jealousy is not quite an expected reaction in a relationship that is not taken seriously or cared about, but when the partner is valued and cared about begins to be questioned, jealousy can be expected (Berscheid & Fei, 1977). Some researchers argue that closeness within relationships is equivalent to the dependence of people in the relationship on each other (Kelley et al., 1983). To understand which partner is more dependent on the other, we can determine by looking at which of them influences the other partner's behaviors, thoughts, and emotions. To understand the dependency of the partners or mutual interactions, look at which partner changes in the relationship (Berscheid, Snyder, & Omoto, 2004).

2.2. Obsessive-Compulsive Disorder (OCD)

According to the American Psychiatric Association (APA, 2013), obsessive-compulsive disorder is a common, severely damaging psychiatric disorder that features obsessions and compulsions. The disorder consists primarily of obsessions (intrusive

thoughts that cause anxiety) and compulsions (repetitive ritual-like behaviors intended to alleviate the resulting anxiety) (Stein, 2002). So, obsessions (such as recurring images, thoughts, and impulses that cause significant time loss and dysfunction) and compulsions (such as repetitive behaviors) occur (American Psychiatric Association, 2013). As a result of the studies, OCD was categorized into four fundamental subcategories these are (a) contamination obsession and accompanying cleaning compulsion, (b) responsibility for harm obsession and handling compulsion, (c) obsession with incompleteness and symmetry and compulsion to organize, align, and duplicate it, and finally (d) religious, sexual, and aggressive obsessions including inappropriate thoughts and mental controlling compulsions (Abramowitz et al., 2010). Cognitive distortion drives people to endeavor to control their thoughts compulsively (erroneous strategies) or by worrying and suppressing thoughts (control techniques); however, these initiate more intrusive ideas (Purdon & Clark, 2002). According to studies with nonclinical subjects, the metacognitive belief that a person needs to control their thoughts is related to more frequent obsessive thoughts (Clark, Purdon, & Wang, 2003). Other psychiatric illnesses may accompany OCD (Ruscio, Stein, Chiu, & Kessler, 2010) and may occur at any time in life, with a prevalence of 2 to 3 percent (e.g., Kessler et al., 2005). Household, job, and social life are spots where OCD patients have struggles functioning, and their quality of life generally decreases (Huppert et al., 2009). If interventions are not implemented, symptoms become severe and permanent over time (Ravizza, Maina, & Bogetto, 1997; Skoog & Skoog, 1999).

2.2.1. Neurobiological Basis of OCD

As stated by Graybiel and Raunch (2000) and van den Heuvel et al., (2016) the processes of creating habits, turning them into practice in routine, and having the ability to control behaviors are related to this flow and regions of the brain, and the role of the neural system is vital. To understand the neurobiological basis of OCD, idiosyncrasies in the functioning of this cycle have been emphasized, and neuroimaging studies have been facilitated (Graybiel and Rauch, 2000; Menzies et al., 2008). As a result, imaging studies' findings obtained from various profound and detailed studies on OCD revealed differences in numerous cortical and subcortical volumes between the patient and control group (Boedhoe et al., 2017, 2016). The models put forward to understand the pathophysiological basis of OCD indicated that there is a dysfunction in the process of

the cortico–striato–thalamo-cortical (CSTC) - hold thalamus, striatum, the medial orbitofrontal cortex, anterior cingulate cortex, and more - and that it has a crucial standing in understanding this disease (Harrison et al., 2013; Menzies et al., 2008; Saxena et al., 1998; Saxena and Rauch, 2000). When research conducted for whole brain analysis to understand the pathophysiology of OCD revealed that not only the CSTC and other regions associated with it but also parts of the cortex (such as the parietal, prefrontal, and cerebellum) showed some abnormalities (Anticevic et al., 2014; Eng et al., 2015).

2.2.2. Obsessive Compulsive Disorder (OCD) and Relationship Obsessive Compulsive Disorder (ROCD)

Personal vulnerabilities have been associated with obsessive-compulsive disorder symptoms in previous studies (Aardema et al., 2013; Doron, Sar-El, & Mikulincer, 2012; García-Soriano, Clark, Belloch, del Palacio, & Castaneiras, 2012). Obsessiveness in close relationships has become a matter of increasing interest and the focus of numerous (i.e., theoretical, empirical) studies (Doron, Derby, & Szepsenwol, 2014). That obsessive concern is called Relationship Obsessive Compulsive Disorder (ROCD; Doron, Derby, et al., 2014; Doron, Derby, Szepsenwol, & Talmor, 2012a, 2012b). People with Obsessive-Compulsive Disorder have some dysfunction in romantic relationships, less interest in marriage, and higher tension about marriage than the public (Emmelkamp, de Haan, & Hoogduin, 1990; Rasmussen & Eisen, 1992; Riggs, Hiss, & Foa, 1992). According to a clinical study conducted to compare obsessive-compulsive disorder and romantic obsessive-compulsive disorder, parallel patterns of stress, resilience, functional impairments, and control were observed in individuals suffering from these disorders (Doron et al., 2016). As a result of some research, a reasonable relationship has been found between OCD's corresponding thoughts (for example, heading beliefs, being flawless, troubles with unpredictability, and exaggeration of menaces) and ROCD symptoms (Doron et al., 2012a, 2012b, 2016; Melli & Carraresi, 2015). Maladaptive thoughts and perfectionism are concerns that are shared by OCD- and ROCD-related signs and thinking domains (e.g., Doron et al., 2012a, 2012b; Doron et al., 2016). Numerous studies have shown that opposing mindsets a person shows or hides toward his/her partner cause the relationship to progress negatively (e.g., LeBel & Campbell, 2013; Lee, Rodge, & Reis, 2010). Reacting in such ways can lead to the emergence of erroneous beliefs concentrated on OCD and relationships, such as terrifying fear of

separation, excessive responsibility (Doron, Derby et al., 2014; OCCWG, 2005), and the mind becoming overly distracted by such beliefs. Compulsive behaviors such as repeatedly checking, comfort-seeking, neutralization, and comparing can seem in these relationships (Doron et al., 2012b, 2017b, Doron, Sar-El, & Mikulincer, 2012a).

2.2.3. Relationship Obsessive-Compulsive Disorder (ROCD)

Obsessive thoughts and compulsive behaviors in romantic relationships have been studied for years (Doron, Derby, & Szepsenwol, 2014; Doron, Derby, Szepsenwol, Nahaloni, & Moulding, 2016; Doron, Derby, Szepsenwol, & Talmor, 2012a), and it is classified as Relationship Obsessive-Compulsive Disorder (ROCD). When Relationship Obsessive-Compulsive Disorder is considered, two subtopics materialize: the first is relationship-centered obsessive-compulsive signs, and the other is partner-focused (Doron, Derby, et al., 2012b; Doron, Derby, Szepsenwol, & Talmor, 2012a). Focusing considerably on the idea that the love of a partner can compel a person to develop dependent and adhesive conduct, which can adversely influence intimate partnership. So, the romantic relationship-oriented obsessive-compulsive markers can degrade romantic bonds, which bonds should be people's strengths and flourishing (Doron et al., 2012). The other presents as obsessive and inattentive signs concentrated on the partner and his/her imperfections (Doron et al., 2012a). Still, whether accurate or not, the focus on the partner's flaws continues to expand as the relationship proceeds (Hatfield & Sprecher, 1986; Sprecher & Metts, 1999). According to Doron et al. (2014), bearing unpleasant thoughts toward one's partner can make one feel embarrassed and guilty. According to Doron et al. (2012), if the indications are relationship-oriented, obsessive-compulsive occurrence directly impacts romantic relationships. In the point of relationship-focused obsessive-compulsive signs, the foremost thing we encounter is that obsessive thoughts about the relationship are developed and occupied with these thoughts. Signs such as feelings about whether the relationship is genuine, the partner's emotions toward the person, and the power of one's emotions toward one's partner arise (Doron et al., 2012b).

In this relationship-oriented obsessiveness case, two connected but different signs arise (Doron, Derby et al., 2014). In both types of ROCD symptoms and conditions are seen at different levels, such as progressing in a mild course or reaching such an advanced level that the loss of strength (Doron et al., 2014), this concern can be considered as the

condition seen in the symptoms of OCD (Abramowitz et al., 2014; McKay et al., 2004). The aspects of ROCD are obsessive suspicions about one's emotions related to the partner, one's partner's emotions, and the relationship, and being distracted by these emotions and ideas. However, there may also be symptoms that the person has suspicion and preoccupation with the partner (e.g., the partner's physical defects, how they are perceived socially, and their characteristics) (Doron, Derby, Szepsenwol, & Talmor, 2012b).

Additionally, these two types of ROCD have been associated with dissatisfaction with affinities and sexuality and mood disturbance such as anxiety and depression (Doron et al., 2014, 2012a, 2012b). Studies have shown a relationship between low satisfaction within a romantic relationship and the relationship- and partner-centered signs of ROCD (Doron, Mizrahi, et al., 2014). So, tension, anxiety, sexual dysfunctions, lack of self-confidence, and depression are associated with these signs (Doron, Derby, et al., 2012a, 2012b; Doron, Mizrahi, et al., 2014; Doron, Szep Senwol, Karp & Gal, 2013). Considering all of these, it can be noticed how broadly ROCD can affect a person's health (Doron et al., 2013; Doron, Derby et al., 2012b).

ROCD creates a series of ideas in individuals that focus on the person's shortcomings or constantly preoccupy the person with questions such as whether he or she is the right person, wise enough for me, and impulsive thoughts such as whether the person should break up with their partner (Doron and Derby, 2017). Signs of relationship obsessive-compulsive condition enclose suspicions and apprehension in the relationship, which facilitates relationship pleasure (Doron et al., 2012; Gorelik et al., 2023). Given the general concerns, all these ideas are undesirable and invasive because they are not reasonable and coherent (Doron et al., 2014a; 2014b). Also included in ROCD are compulsive controlling manners, such as constantly inspecting one's thoughts, aiming for outside support, and comparing one's match with other potentials (Doron and Derby, 2017).

According to Doron and Kyrios (2005), the person may be threatened by circumstances or beliefs that harm the areas of the self that they value highly, such as their moral matters, and the person may develop certain cognitive and behavioral proclivities to compensate for these deficiencies. Considering the person with OCD, mentioned managing strategies expand the frequency of undesirable thoughts and may increase the person's thoughts about himself/herself as being flawed, worthless, or sinful (Aardema et al., 2013). From this perspective, when obsessive-compulsive signs toward the partner

are considered, the person's self-esteem may depend on the significance that his/her partner gives. Defects or issues in the partner can lead to transient lowering in the person's self-evaluation and self-esteem, and the person may seek ways to address these issues through some mental and behavioral means (e.g., Doron et al., 2012). Scholars have suggested that the presence of personal vulnerabilities may lead to the emergence of an obsessive condition (e.g., Aardema et al., 2013; Aardema & O'Connor, 2007; Clark & Purdon, 1993; García-Soriano et al., 2012). Studies on Relationship Obsessive-Compulsive Disorder have generally focused on the self, and it has been suggested that if there is any threat to personal relationships or ethical values, self-worth is also affected (Doron, Szepsenwol, Karp, & Gal, 2013). The adverse life experiences of these people may lead to a defeatist evaluation of the person's self and sensitivities (Doron, Moulding, Kyrios, & Nedeljkovic, 2008).

In relationship obsessive-compulsive disorder, the sensitiveness of one's self may lead to obsessive-compulsive signs being relationship-centered and/or partner-centered (Doron, Derby et al., 2014). Certain relationship and person-related concerns, such as mood swings, relationship troubles, and lessened sexual pleasure, are linked with the outcomes of the partner-centered markers of ROCD (Doron, Derby, Szepsenwol, Nahaloni, & Moulding, 2016; Doron et al 2012a, 2014). Considering the indications of ROCD, the person's obsessive trust-related problems involving incompatibility with the person's partner are usually reduced and relieved by compulsive behaviors, which is the primary aim. That trust issue can often concern significances estimated by how the partner sees the person, such as self-confidence (Doron & Szepsenwol, 2015; Trak & Inozu, 2019). Some studies have concluded that relationship-focused obsessions and particular manners may occur concurrently with a person's self-esteem and attachment anxiety within a relationship (Doron et al., 2013).

2.2.4. Rumination

Problems, uncertainties, conflicts, agreements, or situations such as not being loved back are distressing subjects for people in romantic relationships (e.g., Afifi & Reichert, 1996; Aron, Aron, & Allen, 1998; Boelen & van den Hout, 2010). While rumination is the reaction to often concentrating on the causalities and outcomes of distressing occasions (Nolen-Hoeksema et al., 2008; Raines et al., 2017), obsessions are generally

uncontrollable and undesirable (APA, 2013). Examinations have indicated that ruminative ideas and satisfaction in people's romantic relationships operate oppositely (Calmes, 2008; Hou & Ng, 2014; Lewis, Milletich, Derlega, & Padilla, 2014). Ruminative thinking about these points leads people to experience hardship concentrating on and acclimating to the purposes they set in their romantic relationships (e.g., Boelen & Reijntjes, 2009; Cupach, Spitzberg, Bolingbroke, & Tellitocci, 2011; Cupach, Spitzberg, & Carson, 2000; Saffrey & Ehrenberg, 2007; Sotelo & Babcock, 2013). Serious and destructive adverse psychological troubles such as anxiety, rage, depression, and jealousy can arise from rumination (e.g., Aldao, Nolen-Hoeksema, & Schweizer, 2010; Carson & Cupach, 2000; Nolen-Hoeksema, 1991; Sukhodolsky et al., 2001). Relationship Obsessive-Compulsive Disorder might be distinct from rumination because OC generates uncontrollable, intense preoccupation with thoughts about previous relationships (Doron et al., 2012). However, mental functions such as control, repetition, and intrusive thoughts are shared signs of obsession and rumination (Raines, Vidaurri, Portero, & Schmidt, 2017).

Rumination may be defined as the continuation of a distressing cycle that continues to harm oneself and feed off its source. This distressing state can be cognitively accessible even after threats to one's attachment system have been eliminated (Mikulincer & Shaver, 2008, p. 520). Some studies have also shown that rumination is related to insecure attachment and that individuals have weak aspects in relationships (e.g., Burnette, Davis, Green, Worthington, & Bradfield, 2009; Chung, 2014; Reynolds et al., 2014). For example, a person may ruminate about his/her current relationship and ex-partner simultaneously, while a person who has recently gone through a breakup may think about both a new relationship and his/her ex-partner. Regarding the series of studies on attachment, the feeling of nervousness surrounding individuals in every aspect of their relationships is the cognitive facet of anxious attachment (Mikulincer & Shaver, 2007).

2.3. Attachment System in Romantic Relationships

The theory of the attachment system for humans was developed by Bowlby (1969) by observing the relationship between the child and the caregiver and proposed that the system corresponds to the search for closeness to the attachment figure (Bowlby, 1969). Attachment theories indicate that the attachment system begins to form when an infant

initiates to connect with his or her caregiver (Bowlby, 1973, 1982). It considers maternal overprotection intrusive and associates it with insecure attachment patterns (Ainsworth, Blehar, Waters, & Wall, 1978). Also, conditions such as the baby taking too long to care for, limited individual actions of the child, and the mother having excessive control or no control are related to the parent's overprotection (Levy, 1931). Children may perceive the world as terrifying and live in a high sense of threat due to these overly protective parental attitudes (Craske, 1999; Hudson & Rapee, 2004; Perez-Olivas, Stevenson, & Harris, 2008; Rapee, 1997).

Sometimes, events threat hazards a person's self-worth (such as life circumstances or disturbing thoughts), and in such situations, the person begins to use some behavioral and cognitive coping mechanisms to regain his/her self-worth (Doron and Kyrios, 2005). The secure attachment might be disrupted if attachment figures cannot furnish satisfactory and constant maintenance, which might lead to unfavorable representations of oneself and others in the individual's mind. Regarding insecure attachment, studies on adult attachment systems have shown that there are states of avoidance and attachment anxiety (Brennan, Clark, & Shaver, 1998).

The attachment system persists throughout a person's life (Hazan & Shaver, 1987; Mikulincer & Shaver, 2007); attachment to parents carries over from infancy to childhood and persists as an attachment in romantic relationships in subsequent lifetime (Mikulincer & Shaver, 2007). After the development of the attachment theory, studies began to adapt it to adult romantic relationships (Hazan and Shaver, 1987; Mikulincer and Shaver, 2007). While parents are the immediate individuals for attachment in childhood, in adulthood, they are replaced with romantic partners (Mikulincer & Shaver, 2007). The demand for intense intimacy in relationships and a decisive fear of refusal are aspects of attachment anxiety (Brennan et al., 1998; Fraley et al., 2000). Pivoting oneself instead of seeking assets from a partner and having little faith in individuals can be defined as attachment avoidance (Brennan et al., 1998).

Researchers have suggested that insecurely attached individuals indicate obsessive-compulsive disorder signs and cognition (Doron et al., 2009; Doron, 2020; Seah et al., 2018). Additionally, they propose that the attachment system may act to restrain feelings to determine whether invasive ideas turn into obsessions during adulthood (Doron and Kyrios, 2005; Doron, 2020).

2.3.1. Avoidant Attachment in Romantic Relationships

Dread of being intimate, distress with immediacy, and vulnerability to openness are aspects of individuals with attachment avoidance (Brennan et al., 1998). Pivoting oneself instead of seeking assets from a partner and having little faith in individuals can be defined as attachment avoidance (Brennan et al., 1998). The effort to repress sentiments of weakness (Mikulincer et al., 2004) and to show that one is powerful and perfect under all circumstances is a facet of people who exhibit avoidant behaviors, and this can be considered as a behavior of trying to control unwanted ideas in obsessive-compulsive signs. Individuals with attachment avoidance do not solely anticipate that the relationship will not be successful; they are certain that it will happen (Birnie et al., 2009), and they do not believe that mates are trustworthy and credible (Shaver and Mikulincer, 2005). Numerous examinations have shown that avoidance and anxiety attachment are associated with OC markers (Boelen et al., 2014; Boysan and Cam, 2018; Doron et al., 2009; Gülüm and Dag, 2014), and more obsessive ideas (Doron et al., 2009).

2.3.2. Anxious Attachment in Romantic Relationships

Attachment anxiety is thoughts that concentrate on a person's ability to reach their partner when required and have this need met. In contrast, avoidance is defined as being emotionally distant and independent of suppressing needs. Choosing the incorrect manners to manage stress, seeing oneself negatively, adverse sentiments, and disturbed emotional control are all related to insecure attachment and generally recreate a position in the development of mental diseases (Mikulincer & Shaver, 2007).

When it comes to disputes between partners, there is a relationship between attachment anxiety and adverse behaviors towards the partner, such as pressure, blaming, intimidation, and criticizing the partner (Bonache, 2019; Crangle & Hart, 2017; Creasey, 2002; Feeney, 2017; Feeney & Fitzgerald, 2018). There is a connection between attachment anxiety and conducts that damage the relationship, such as interfering with the spouse's personal life (Feeney, 1999; Lavy et al., 2013), influencing the mate to make the partner feel guilty and compliant and gain the partner's love (Overall et al., 2014), and establishing closeness with the partner through pressure, insistence, and coercion (Brock & Lawrence, 2014). Character features provide crucial information about what kind of

romantic relationship one prefers and how one will behave at present and end the affinity (e.g., Jones & Paulhus, 2010).

The demand for intense intimacy in relationships and a decisive fear of refusal are aspects of attachment anxiety (Brennan et al., 1998; Fraley et al., 2000). Therefore, these people are usually highly dependent on their partners, continuously seeking intimacy and solace (Feeney & Karantzas, 2017). During times when the partner is inaccessible, individuals with attachment anxiety are vigilant to stress and turn down. Also, they react more insecurely in terms of detachment from their partners than other people who have secure attachments (Feeney, 2008). They have difficulty managing their feelings, they may void, execrate, and be angry (Simpson et al., 2002). Therefore, these people are usually highly dependent on their partners, continuously seeking intimacy and solace (Feeney & Karantzas, 2017). These people may compel their partners, cling to them, and display some manipulation to receive affection, consent, and intimacy (Mikulincer & Shaver, 2011). The thought of not having one's needs met by the partner, the idea of being unloved, and being abandoned are concerns that are often seen (Mikulincer & Shaver, 2016).

An individual's mental health is crucially related to attachment (Karreman and Vingerhoets, 2012). When comparing securely attached individuals who have consistent and unchanging behaviors towards others (Bowlby, 1980) with those who do not have security in relations, it has been observed that those with insecure attachment have poor physical health, anxiety, and depression (Fagundes et al., 2014; Marganska et al., 2013; McWilliams and Bailey, 2010; Meredith et al., 2015; Palitsky et al., 2013). According to the study outcomes, worries general in relationships can become obsessional, despair, and cause corruption (ROCD; Doron, Derby, Szepsenwol, & Talmor, 2012a, 2012b).

2.3.3.1. Anxious Attachment in Romantic Relationships and OCD/ROCD

The incompatibility between the child and his/her caretakers gives the child an intention to manage the attachment system in the connections, which completes the anxious attachment type, also considered obsessive (Cassidy and Berlin, 1994). Researchers have suggested that insecurely attached individuals indicate obsessive-compulsive disorder signs and cognition (Doron et al., 2009; Doron, 2020; Seah et al., 2018). Especially, one of the studies suggests that there is considerable anxious

attachment linked with obsessive-compulsive disorder stringency (Seah et al., 2018; Trak and Inozu, 2019).

Studies have shown that OCD includes a genetic origin (Mataix-Cols et al., 2013; Taylor, 2013), but the relations between parent and child, known as environmental features, even impact the condition to expand and upkeep (Brander, Perez-Vigil, Larsson, and Mataix-Cols, 2016, p.37). So, attachment anxiety may trigger OCD-related misjudgments and unsuitable coping mechanisms because there is a drastic emphasis on disturbing preoccupation thoughts (Doron, Moulding, Kyrios, Nedeljkovic, & Mikulincer, 2009). ROCD symptoms are predicted to influence many aspects of a romantic relationship and other relationships with a person, such as with their parents. When considering partner-focused symptoms, it appears that the parent develops child-focused ROCD, where signs become preoccupied with suspicions and worries about how their child is perceived to have behavioral, physical, and social defects (Doron, Derby, & Szepsenwol, 2017).

According to a study, people who are anxiously attached and consider their self-worth founded on their position in the relationship tend to develop disturbing thoughts focused on the relationship, and these thoughts can subsequently turn into obsessive thoughts concentrated on the relationship (Doron et al., 2013). Studies have invariably encountered a connection between attachment anxiety and a tendency toward romantic relationship-related obsessive symptoms (Doron et al., 2012a; Doron, Szepsenwol, Karp, & Gal, 2013). Attachment anxiety and sensitivity to self-perception within the relationship were found to be associated with ROCD signs (Doron, Szepsenwol, Karp, & Gal, 2013).

2.3.4. Oxytocin and Romantic Attachment

Considerable studies on humans and other living things have indicated that oxytocin is crucial in relationship processes (Buchheim et al., 2009; Carter, 2014; Insel and Shapiro, 1992; Macdonald, 2013; Samuel et al., 2015; Young et al., 2001; Young and Wang, 2004). The studies about secure attachment and oxytocin consider less anxiety and less avoidance in adults (Buchheim et al., 2009; Costa et al., 2009; Donaldson and Young, 2008; Gordon et al., 2008; Macdonald, 2013; Samuel et al., 2015; Uvnäs-Moberg, 1998).

In a study where a dose of oxytocin was administered intranasally to insecurely attached individuals, it was marked that they developed thoughts about security

(Buchheim et al., 2009). In another study, intranasal oxytocin expanded affiliation in anxiously attached individuals who did not display avoidant conduct (Kollock, 1998). Still, it diminished affiliation in anxiously attached individuals who displayed avoidant conduct Bartz et al., 2011). Men with intranasal oxytocin perceived their partners as much more appealing than others and rising neural activity of the nucleus accumbens was observed in an fMRI examination to indicate this positive tendency toward partners (Scheele et al., 2013).

2.4. Machiavellianism

Machiavellianism is defined by behaviors in social settings that involve manipulating people through deceit or taffy to attain personal gain or a distinct purpose (Jones & Paulhus, 2009). These people, called Machiavellians, conceive various adaptive and unsuitable manners to adjust to demanding situations. Inferring from this, Machiavellianism demonstrates the adaptive behavior of humans in living circumstances (Kaplan & Gangestad, 2005). Behaviors such as being dominant in the social sphere (Hodson, Hogg, & MacInnis, 2009) and being able to control people (Paulhus & Williams, 2002) have been associated with Machiavellianism as a result of studies, and thus, manipulating and abusing the mate with Machiavellianism is an expected behavior.

Baughman and colleagues suggested Machiavellianism is linked with raised mental effort in the tactics used to deceive others (Baughman, Jonason, Lyons, & Vernon, 2014). Effective Machiavellians have highly developed cognitive abilities supported by neural mechanisms that enable them to use their emotional responses appropriately and in a way that serves their goals to manipulate individuals to achieve their purposes (Bereczkei, 2018). The need to establish closeness with other people to manipulate them is to avoid showing one's weaknesses and vulnerabilities (Ináncsi, Láng, & Bereczkei, 2015; Sherry, Hewitt, Besser, Flett, & Klein, 2006), and people with Machiavellianism traits are often unaware of their own emotions (Christie & Geis, 1970; Wastell & Booth, 2003). Machiavellian individuals may have immediate and instinctive emotional reactions towards their partners, but they suppress these and react more effectively in the name of their interests, thus increasing their exploitative effects on the other (McIlwain 2003).

In romantic relationships, partner appeal, relationship continuity, and its quality can be influenced by markers of Machiavellianism, which are characterized by distrust, a

desire to exploit others, and emotional detachment (Christie & Geis, 1970; Vecchio & Sussman, 1991). Moreover, behaviors such as infidelity, sexually deceptive acts, and relationship commitment problems are common behaviors in individuals with high Machiavellianism traits (Ali & Chamorro-Premuzic, 2010; Brewer & Abell, 2015). The two most significant characteristics of a romantic relationship are attachment and trust (Gere & MacDonald, 2013). A person's expansion of manners to conceive and sustain a relationship with dependency on another person that person is called commitment (Kelley et al., 2003). Commitment may lead to several praising manners, such as sustaining the partner (Rusbult, Olsen, Davis, & Hannon, 2004) and dwindling attraction in other alternative persons (Miller, 1997). Reciprocation from the partner, receiving approving feedback, and expanding the quality of the affinity are gains associated with trust (Givertz, Woszidlo, Segrin, & Knutson, 2013). In relationships with much trust between partners, a sensible approach to complaints of a spouse (Murray, Lupien, & Seery, 2012), an optimistic approach to prior manners (Luchies et al., 2013). People who demonstrate Machiavellianism traits generally do not trust and have faith in people (Christie & Geis, 1970), which might lead to a deficiency of faith in relationships. Distrust of romantically attached ones and hesitation about emotions were reported by individuals high in Machiavellian traits (Ináncsi, Láng, & Bereczkei, 2015). Being emotionally distant, deceiving, and manipulating people are the most fundamental characteristics of Machiavellianism (Christie & Geis, 1970; Geis & Moon, 1981). To maintain the continuity of relationships, people involve certain tactics, which can be positive or destructive and damaging behaviors (Buss, 1988; Buss & Shackelford, 1997). They are considered hostile to individuals (Ináncsi, Láng, & Bereczkei, 2015) and are distrustful, dubious, and emotionally disconnected (Christie & Geis, 1970). Machiavellians consider negatively about the people they value and yet display symbiotic mindsets to manipulate mates (Ináncsi, Láng, & Bereczkei, 2015, p.113).

2.4.1. Machiavellianism and Gender

It has been suggested that there is a relationship between Machiavellianism and being detached from one's own emotions (Christie & Geis, 1970; Wastell & Booth, 2003). The state of being close to people to use and manipulate them is thought to cover up one's faults and defects (Ináncsi, Láng, & Bereczkei, 2015; Sherry, Hewitt, Besser, Flett, & Klein, 2006). The impacts of Machiavellianism on intimate connections and sexuality

have been demonstrated by research (Brewer & Abell, 2015a). A reluctance to commit to a relationship and not be emotionally intimate is a feature of individuals with high Machiavellianism (Ali & Chamorro Premuzic, 2010). For this basis, studies are conducted on immediate sexual connections, not steady intimacy-related relationships of people who are Machiavellianists (Brewer et al., 2017). It is a matter of debate that Machiavellianism may affect men and women differently when it comes to relationships (McHoskey, 2001). Women who display more elevated Machiavellian characteristics generally prioritize sexuality over romantic relationships (Brewer, Abell, & Lyons, 2016) and tend to have their demands satisfied by alternative mates (Abell & Brewer, 2016). Considering the number of women who continue to communicate with their exes, through this kind of approach, they may continue to meet with their exes and manipulate them (Halpern-Meekin, Manning, Giordano, & Longmore, 2012; Mogilski & Welling, 2016). For example, Machiavellian women secretly flirt with other people to avoid their partners' protective reactions, and in this way, they display a hidden opposition (Abell & Brewer, 2016). So, non-romantic affinities do not require high emotional safety and dedication (Abell, Brewer, Qualter, & Austin, 2016), so relationships that require low dedication and intimacy may be preferred (Ali & Chamorro-Premuzic, 2010). However, Machiavellian individuals have significant chances to manipulate and exploit their spouses when they are in continuous romantic affinities (Brewer & Abell, 2015b).

2.4.2. Psychological/Emotional Manipulation

Psychological manipulation is the intention of the type of social influence that seeks to alter people's mindsets and manners by involving shady, exploitative, and insidious actions (Braiker and Harriet, 2004). A person might use psychological techniques to influence others to manipulate and obtain desired things (Drucker, 2002). Some studies have shown that ongoing psychological abuse is much more damaging than physical abuse (Anderson et al., 2003). To influence others' emotions and behaviors to attain personal benefit is considered emotional manipulation (Austin et al., 2007). Emotional manipulation, which is considered a widely used fact, is used by people in many areas of life, mainly in social connections. Some people emotionally manipulate people to achieve their goals by influencing their feelings and cognitions, regardless of the means used (Al-Hindawi & Kamil, 2017). According to Braicker, emotional manipulation is a sort of

social leverage described as the covert exploitation of others by deceitful methods by modifying their manners for one's own benefit (Braicker, 2004).

The relationships of people in romantic relationships influence their interchanges, their personalities, and their associations with other individuals and their kids. If one partner is experiencing psychological manipulation, they may also succumb to abusive behavior, refusal, or dominance from their partner. In other words, psychological manipulation means comprehending the powers and flaws of the partner in the relationship, weakening their capability, damaging self-confidence, and taking control of them (Abdella, 2019). The partner exploits and subtly manipulates the other partner's emotions; the manipulating partner's behaviors include disrespect for relationships and getting close to people to impersonate and abuse them (Wai & Tilipoulos, 2012).

Manipulators exhibit different manners than their normal when dealing with people. They are influenced by the attraction of individual and material interests and pursue the strategy of manipulating feelings to achieve their goals. These behaviors are implemented deliberately to hurt the person and are accompanied by self-blame, nervousness, and a lack of self-confidence. All things considered, these changes in a person's emotions impact on the person and the people around them (Forward, 2015).

Investigations support the argument that Machiavellian individuals are backed by flexible and high-level cognitive capability when making decisions. They adjust competently to differences in social dimensions (Jones & Paulhus, 2009), which implies high cognitive functions but low cognitive capabilities in their tactics and manipulations (e.g., Bereczkei, 2015). According to research, Machiavellians think highly of their prestige and do not act impulsively, estimating their every movement (Christie & Geis, 1970; Jones & Paulhus, 2011a; Jones & Paulhus, 2011b). From Mohammed's (2022) perspective, it is a manner of manipulation to accomplish personal purposes and eliminate rational proof without considering how manipulation will affect the individual being manipulated. Making people feel guilty, threats, lies, intimidation, and tricks are some of the manipulation tactics and influence behaviors of a manipulated person (Mandal & Kocur, 2013). Although studies on emotional abuse are scarce, studies have supported the idea that people with elevated ranks of Machiavellianism may be perpetrators of emotional abuse at the exact level (Carton & Egan, 2017).

2.4.2.1. Gaslighting

Gaslighting is one of emotional/psychological abuse in which an unreal interpersonal environment is created by the abuser, identified as the gaslighter, to make the victim, identified as the gaslightee, feel or appear crazy (Sweet, 2019). Gaslighting is an adversary force technique that can be used purposely or unaware (Abramson, 2014). Lying, denying, contradicting, and constantly misleading the person are gaslighting tactics that aim to make the person unstable (Bhatti et al., 2021; Sweet, 2019). Making the person suspicious, thinking they lost their insanity, and questioning the truth are some of the manipulation techniques (Calef and Weinshel 1981). As a result, the partner whose stability has been disrupted due to being exposed to gaslighting behaviors cannot seek help and support to escape this abusive relationship because they have lost their sense of trust in their surroundings (Sweet, 2019). It consists of two positions. First, one tries to control the other person and manipulates the person's thoughts to direct them according to their own will. The other one is that a person applies these steps in a non-hostile way, and the manipulated person believes the things done and said and begins to doubt himself/herself (Dorpat 1996). According to Stern (2007), people who are exposed to this abuse do not believe it at first, then they become defensive, and finally, they become depressed. Besides that, psychosis, depression, and anxiety may emerge in individuals who are manipulated (Dorpat 1996). Feelings of hopelessness and loneliness are more drastic in emotionally abused women than in those who experienced physical abuse (Loring, 1994).

2.5. Cognitive Attentional Syndrome (CAS)

Wells describes the metacognitive theory that concerns people's thinking and suggests the problem is related to their rigid and repetitious reactions to negative thoughts, beliefs, and emotions (Wells, 2000). Wells stated this form of consideration is known as a cognitive attentional syndrome (CAS), characterized by repetitive patterns of thinking, such as anxiousness and rumination, and maladaptive control strategies, such as suppressing thoughts (Wells, 2000). Metacognitive beliefs, like the repetition of thought patterns and problematic coping strategies, have played a role in the development of the CAS. If a person is nervous about something, they may develop a positive perspective that protects them from potential threats; for example, if I worry about the future, I can avoid difficult positions (Wells, 2009).

Metacognitive beliefs lead the person to develop some coping mechanisms related to cognitive attentional syndrome to cope with negative emotions, thoughts, and beliefs, and these mechanisms cause the person to sustain negative emotional states and strengthen problematic beliefs (Wells, 2009). Wells presented that using the coping strategies related to CAS mentioned earlier may have several negative consequences, one of the most significant being the development of attentional bias against the perception of threats. Considering that this specific focus on these threats leads to a strengthening of the person's mood and anxiety-related symptoms (Wells, 2009).

The metacognitive model regards not as what is thought but how that thing is thought about and the influence of control and emotion on it (Wells, 2008, p.1). Attentive and cognitive coping strategies in metacognitive thoughts include monitoring probable dangers, and nervousness, rumination, and thought suppression are all considered psychological dysfunctions (Wells & Matthews, 1994).

According to Mathews, the inability to take attention away from the threatening element may increase awareness of the potential for danger and thus be a reason for the continuation of anxiety (Mathews 2004). If this is the case, good management of attention can lessen destructive outcomes, while inadequate management can cause symptoms to worsen (Beilock & Ramirez, 2009). A series of thoughts and visions that adversely influence a person and are partially controllable defines the worry (Borkovec et al., 1983). On the other hand, concentrating repetitively on opposing feelings and signs, continually questioning the meaning and reason of these situations, and dwelling repeatedly on the outcomes defines rumination (Nolen-Hoeksema and Morrow, 1991).

Cognitive Attentional Syndrome-CAS includes persistent repetitive thoughts, attentional preoccupation with threats, and inaccurate coping mechanisms (such as substance use, avoidance, and suppression). These conditions have been considered potential attributes of emotional disorders (Fergus et al., 2012; Spada et al., 2008; Wells & Cartwright-Hatton, 2004). The syndrome originates from inaccurate metacognitive beliefs such as worrying harms me and helps me cope (Wells, 2009; Capobianco et al., 2018). The syndrome is supposed to have transdiagnostic characteristics, principally associated with anxiety and mood-related conditions (Wells, 2009). Also, it might worsen the other mental disorders-related signs (Spada et al., 2015). When a person cannot self-regulate, then emotional disruptions arise. This concern is demonstrated by the CAS, which is the foundation of the Self-Regulatory Executive Function model (S-REF),

created by Wells and Matthews (1996). According to the model, CAS is activated by contrasts of personal purposes and the sensed facts. For some, this is a clear-cut case, while for others, CAS can be a regular condition that accompanies other psychological disorders (Wells & Matthews, 2015).

Cognitive Attentional Syndrome consists of an adverse line of metacognitive beliefs that are destructive to a person's awareness and management of thoughts (Wells, 2000). A person's cognition and coping approaches, founded on that cognition, constitute metacognitive beliefs. These thoughts initiate the cognitive attentional syndrome and interrupt the regulation of feelings (Wells, 2000). Within the context of metacognitive theory, the cognitive attentional syndrome model is especially based on some mental diseases (such as PTSD, OCD, anxiety disorders, and depression) (Wells, 2008).

3. METHOD AND MATERIALS

3.1. Research Study

This study is quantitative, cross-sectional research aiming to examine the relationship between manipulative and obsessive behaviors in romantic relationships and Cognitive Attentional Syndrome (CAS). The self-reported data were collected via questionnaires administered to individuals in romantic relationships. The data collected were analyzed to explore the relationship between Cognitive Attentional Syndrome (CAS) and manipulative and obsessive tendencies that are exhibited.

3.2. Research Model

The study is designed to investigate the obsessive tendencies that individuals in romantic relationships develop towards their relationships and/or partners, and have potential Machiavellian character traits, and whether the factors are associated with Cognitive Attentional Syndrome (CAS). The Cognitive Attentional Syndrome is considered the dependent variable, and obsessions and manipulations are the independent variables.

3.3. Study Population and Sampling Method

In terms of applicability to the general population, the surveys were collected via Google Forms. After the individuals reached the consent form, they answered the Demographic Information Form, MACH-IV test of Machiavellianism, the Relationship Obsessive Compulsive Inventory (ROCI), the Partner Related Obsessive Compulsive Symptom Inventory (PROCSI), the Experiences in Close Relationships Inventory (ECR-R), and the Cognitive-attentional Syndrome Questionnaire (CAS-1) scales, respectively. People between the ages of 18-70 who were previously or currently in a romantic relationship were included. People were reached through social media applications, and participation was based on their volunteering.

3.4. Inclusion and Exclusion Criteria

Inclusion Criteria

Those over the age of 18 and those who have been in a romantic relationship or are still in a relationship.

Exclusion Criteria

Under 18 years old and those who have never had a romantic relationship before.

3.5. Participants

A total of 171 people participated in the study, 149 of whom were women and 122 were men. The participants ranged in age from 18 to 70. 90 people between the ages of 18-24, 113 people between the ages of 25-34, 62 people between the ages of 35-49, and 6 people between the ages of 50-59. No one between the ages of 60 and 70 participated. 88 people reported being in a relationship, 87 people reported being single, 70 people reported being married, and 26 people reported being divorced. Considering the education levels, it was seen that 8 people had a Primary school degree, 18 people had a Middle School degree, 44 people had a high school degree, 164 people had a university degree, 35 people had a master's degree, and 2 people had a Ph.D.

3.6. Assessment Tools and Techniques

To collect and analyze data, inventories and tests such as the Sociodemographic Information Form, MACH-IV test of Machiavellianism, Relationship Obsessive Compulsive Inventory (ROCI), Partner Related Obsessive Compulsive Symptom Inventory (PROCSI), Experiences in Close Relationships Inventory (ECR-R), and Cognitive-attentional Syndrome Questionnaire (CAS-1) were applied via Google Forms.

3.6.1. Sociodemographic Form

In the sociodemographic form, participants were asked about their age, gender, marital status, education level, and whether they are in a romantic relationship. Prepared by a researcher.

3.6.2. MACH-IV test of Machiavellianism

Richard Christie and Florence L. Geis developed the MACH-IV scale in 1970 to measure the characteristics of Machiavellianism. Manipulative tendencies, self-interest, and strategic thinking are considered Machiavellianism. The scale measuring these thinking and behavior styles consists of 20 questions, and participants answer Likert-type questions in a way that suits them (Strongly Disagree, Little Disagree, Disagree, Neutral, Agree, Little Agree and Strongly Agree) (Christie & Geis, 1970). As a result of the evaluations, a high score on the Mach test was predicted to indicate emotional inadequacy and to make utilitarian and manipulative decisions. Conversely, people with low scores are more likely to be cooperative and have honest and moral traits (Christie & Geis, 1970; Jones & Paulhus, 2009). As a result of the studies conducted using the MACH scale, it was concluded that the Cronbach alpha value of the scale was between .62 and .79 (McHoskey, 1999, 2001a, 2001b; Paulhus & Williams 2002). A Turkish adaptation study was conducted by Barut (1996) as a master's degree thesis. High internal consistency and short-term repeatability were achieved in the Turkish version (Engeler & Yargıç, 2004c).

3.6.3. Relationship Obsessive Compulsive Inventory (ROCI)

The Relationship Obsessive Compulsive Inventory (ROCI) was developed by Doron, Szepsenwol & Moulding (2012) to measure obsessive and compulsive behaviors in romantic relationships. It is used to assess relationship-focused obsessions and compulsions (ROCD) (Doron et al., 2012). Likert-type (Not at all, A little, Moderately, A lot, Very much) questions are answered according to personal experiences. It includes questions about doubting the relationship, obsessive thoughts and feelings about whether the partner is right for the person (Doron et al., 2012). Turkish adaptation and validity and reliability study was conducted by Trak and İnözü (2022), its internal consistency is high (Trak and İnözü (2022)).

3.6.4. Partner Related Obsessive Compulsive Symptom Inventory (PROCSI)

The Partner-Related Obsessive Compulsive Inventory (PROCSI) is an instrument to examine the obsessive and compulsive tendencies of one partner to another (Doron, Derby, Szepsenwol & Moulding, 2014). The scale consists of 28 items, and the options were created as 5-point Likert types (Not at all, A little, Moderately, A lot, Very much).

People evaluate their partners' morality, loyalty, physical characteristics, and the correctness of their relationships. As a result, this scale can evaluate obsessive thoughts and behaviors considering relationships to various extents (Doron et al., 2014). Trak and İnözü (2017) adapted it into Turkish and completed psychometric examinations. The alpha value was found to be .88, as high internal consistency and reliability were ensured with repeat tests. As a result, the scale adapted to Turkish was a valid and reliable measurement tool (Trak & İnözü, 2017).

3.6.5. Experiences in Close Relationships Inventory (ECR-R)

ECR was designed by Brennan, Clark, and Shaver (1998) to assess attachment (avoidant and anxious) in romantic relationships. It was invented as two main factors, 36 items, and a 7-point Likert type (Strongly Disagree, ……, Strongly Agree) (Brennan et al., 1998). The reliability study found that the scale had a high alpha value of .91 for attachment anxiety and .94 for avoidance. A high correlation was found between considerations such as satisfaction and trust in close relationships through scale (Brennan et al., 1998). Selcuk, Gunaydın, Sumer, and Uysal (2005) conducted the Turkish adaptation, validity, and reliability study. High consistency values that were proximate to the original were also found for the two subscales in the Turkish version (Selcuk et al., 2005).

3.6.6. Cognitive-attentional Syndrome Questionnaire (CAS-1)

The CAS-1 scale, developed by Adrian Wells (2009), aims to assess processes that accompany some mental illnesses, such as attention to negative emotions, rumination, and focusing on possible threats (Wells, 2000; Wells & Matthews, 1996). The validity and reliability of the original form were found to be high, and the internal consistency (Cronbach's $\alpha > .80$) was also high (Wells, 2009). The scale was adapted to Turkish by Tosun et al. (2017), and elevated internal consistency was conducted (Tosun et al., 2017).

3.6.7. Analysis of Data

The data collected via Google Forms was analyzed by the IBM SPSS 30.0 software program to test the proposed hypotheses.

4. RESULTS

This section will report statistical analyses of MACH IV, ROCI, PROCSI, ECR-R, and CAS-1 scales adapted to Turkish. Reliability and validity analyses of all scales were conducted. T-test, Mann-Whitney U, Correlation, and Regression statistical tests, and Mediating Effect are used to evaluate relationships.

Table 1. Demographic characteristics of the participant

Age	**Frequency**	**Percent & Valid Percent**	**Cumulative Percent**
18-24	33,2	33,2	33,2
25-34	41,7	41,7	74,9
35-49	22,9	22,9	97,8
50-59	2,2	2,2	100,0
Total	100,0	100,0	
Gender	**Frequency**	**Percent & Valid Percent**	**Cumulative Percent**
Female	149	55,0	55,0
Male	122	45,0	100,0
Total	271	100,0	
Relationship Status	**Frequency**	**Percent & Valid Percent**	**Cumulative Percent**
In relationship	88	32,5	32,5
Single	87	32,1	64,6
Married	70	25,8	90,4
Divorced	26	9,6	100,0
Total	271	100,0	
Education Level	**Frequency**	**Percent & Valid Percent**	**Cumulative Percent**
Primary School	8	3,0	3,0
Middle School	18	6,6	9,6
High school	44	16,2	25,8
University	164	60,5	86,3
Master's degree	35	12,9	99,3
Ph.d	2	,7	100,0
Total	271	100,0	

4.1. Reliability Analysis

Reliability analysis was performed to assess the internal consistency of the scales, and Cronbach's Alpha values (α) were calculated.

Table 2. Internal consistency coefficients (Cronbach's Alpha) of the Scales

SCALES	Cronbach's Alpha
MACH IV	.903
ROCI	.949
PROCSI	.968
CAS-1	.890
CAS-1 – Cognitive Behavioral Strategies Subscale	.867
CAS-1 – Metacognitive Beliefs Subscale	.793
ECR-R	.965
ECR-R – Avoidant Attachment Subscale	.948
ECR-R – Anxious Attachment Subscale	.943

4.1.1. Internal Consistency of MACH–IV

MACH-IV scale consisted of 20 items, and Cronbach's Alpha (α) value was found to be .90. It was higher than the generally accepted and good value (.70) (Tabachnick & Fidell, 2013). Item total correlations are generally around > .30; the items generally make a significant contribution to the scale. As a result, the scale has high reliability and consistency, on the basis that the items measure the same structure. Participants gave medium-high level answers with (M = 82.50) in the scoring between Minimum 20 and Maximum 140. Participants gave non-homogeneous answers with different levels (V = 484.776) and a certain variability (Std. Deviation = 22.018). The internal consistency of the original English version of the MACH IV Scale was reported to be acceptable between α = .70 and α = .76 (Christie & Geis, 1970). In the Turkish adaptation version of the MACH IV, the internal consistency value is α = .87 (Barut, 1996).

4.1.2. Internal Consistency of ROCI

The ROCI consists of 14 items, and Cronbach's Alpha (α) value was found to be .94. It was higher than generally accepted and a good value (.70), and Internal consistency above .90 is considered a high measurement (Tabachnick & Fidell, 2013). Item total correlations are generally around > ≥ .61, the items generally make a significant contribution to the scale. As a result, the scale has high reliability and consistency on the basis that the items measure the same structure. Participants gave low-medium level answers with M = 31.35 in the scoring between Minimum 14 and Maximum 70. Participants gave non-homogeneous answers with different levels (V = 223.85) and a certain variability (Std. Deviation = 14.962). The internal consistency value of the original English scale of ROCI is α = .92 (Doron et al.), and the internal consistency value of the Turkish adaptation, Cronbach's alpha, is α = .90 (İnözü & Tırak, 2015).

4.1.3. Internal Consistency of PROCSI

PROCSI consists of 24 items, and Cronbach's Alpha (α) value was found to be .96. Internal consistency above .90 is considered a high measurement (Tabachnick & Fidell, 2013). Total item correlations are generally around ≥ .80, and the items make a significant contribution to the scale. However, the item correlation results of some items (1st, 4th, 16th, 23rd) are negative. In the English and Turkish adapted versions of the scales, these items were deleted. While the purpose of the scale is to measure the tendency of obsession towards and/or related to the partner, these items generally have the content of partner satisfaction. Participants gave low-medium level answers with M = 45.13 in the scores between a minimum of 24 and a maximum of 120. Participants responded non-homogeneously with different levels (V=454.643) and a certain variability (Std. Deviation = 21.322). The internal consistency value of the original English scale of PROCSI is α = .88 (Doron et al.), and the internal consistency value of the Turkish adaptation, Cronbach's alpha, is α = .91 (İnözü & Tırak, 2015).

4.1.4. Internal Consistency of ECR-Revised

ECR scale consisted of 36 items, and Cronbach's Alpha (α) is found to be .96. Internal consistency above .90 is considered a high measurement (Tabachnick & Fidell, 2013). Item total correlations are generally around > .60; items significantly contribute to

the scale. Participants gave low-medium level answers with M = 126.97 in the scoring between Minimum 36 and Maximum 252. Participants gave non-homogeneous answers with different levels (V = 2703.221) and variability (Std. Deviation = 51.993). As a result, the scale is a measurement tool with high reliability. When the subscales of ECR are examined, the ECR-Avoidant Attachment Subscale consists of 18 sub-items, and the α value is found to be .94. The other subscale of ECR, which is the Anxious Attachment, consists of 18 items, α value is found to be .94. The internal consistency value of the original English scale of ECR-Revised is α = 0.90 (Fraley, Waller, & Brennan, 2000), and the internal consistency value of the Turkish adaptation Cronbach's alpha for Avoidant attachment is α = .93, and for anxious attachment is = .91 (Sümer and Güngör, 1999).

4.1.5 Internal Consistency of CAS-1

The CAS scale consists of 16 items, and Cronbach's Alpha (α) value was found to be .89. It was higher than the generally accepted and good value (.70) (Tabachnick & Fidell, 2013). The item-total correlations are mostly > .50, and the items significantly contribute to the scale. In the scoring between a minimum of 16 and a maximum of 160, participants gave moderate answers with M = 82.63. Participants gave non-homogeneous answers with different levels (V = 742.361) and variability (Std. Deviation = 27.361). As a result, the scale has high reliability and is psychometrically valid. The subscales of CAS, Cognitive Behavioral Strategies, α value is .86, and Metacognitive Beliefs, α value is .79. The internal consistency value of the original English scale of CAS-1 is between α = .85 and α = .90 (Wells, 2009), and the internal consistency value of the Turkish adaptation of Cronbach's alpha is α = .88 (Esen and Doğan, 2017).

4.2. Exploratory Factor Analysis (EFA)

To test the validity of the scales, the Principal Axis Factoring (PAF) method and Varimax rotation were used within the scope of Exploratory Factor Analysis (EFA).

Table 3. Exploratory factor analysis (EFA) of Scales

Variable	KMO	χ^2	Number of Factors	Cumulative %	N
MACH IV	.873	χ^2 (190) = 2419.579, p < .001	4	50.095	271
ROCI	.929	χ^2 (66) = 2758.685, p < .001	1	62.086	271
PROCSI	.929	χ^2 (276) = 6149.230, p < .001	3	68,598	271
ECR-R_AVOID	.920	χ^2 (153) = 3719.439, p < .001	3	62,916	271
ECR-R_ANX	.932	χ^2 (153) = 3514.820, p < .001	3	59,406	271
CAS-1	.844	χ^2 (120) = 2631.876, p < .001	4	59,916	271

4.2.1. Exploratory Factor Analysis (EFA) for MACH IV

To test the validity of the MACH scale, the Principal Axis Factoring (PAF) method and Varimax rotation were used within the scope of Exploratory Factor Analysis (EFA). 20 items were included in the analysis, and the sample size was 271. To test its suitability for factor analysis, Bartlett's Test of Sphericity and the sample test Kaiser-Meyer-Olkin (KMO) Measure of Sampling test were applied. The KMO test result was .813, and Bartlett's Test of Sphericity (χ^2 (190) = 2419.579, p < .001). The scale's suitability for factor analysis was tested and was found appropriate. Four factors with eigenvalues over 1 were attained. The first factor showed 16.9%, the second factor 14.2%, the third factor 11.5%, and the fourth factor 7.3% variances. These factors account for 50.9% of the cumulative variance. There is no factor analysis for the original English MACH IV scale. The scale was used based on the scoring components. For the MACH IV Turkish Adaptation, N = 320, KMO = 0.84, Bartlett's Test of Sphericity χ^2 = 913.57, df = 190, p < .001 results were obtained. Four factors were obtained, and the cumulative variance is 58.2% (Barut, 1996).

4.2.2. Exploratory Factor Analysis (EFA) for ROCI

To test the validity of the ROCI scale, the Principal Axis Factoring (PAF) method was used within the scope of Exploratory Factor Analysis (EFA). 12 items were included in the analysis, and the sample size was 271. To test its suitability for factor analysis, Bartlett's Test of Sphericity and the sample test Kaiser-Meyer-Olkin (KMO) Measure of Sampling test were applied. The KMO test result was .929, and Bartlett's Test of Sphericity (χ^2 (66) = 2758.685, $p < .001$). The scale's suitability for factor analysis was tested and was found appropriate. As a result of the analysis, a single-factor structure emerged, and this factor accounts for 62% of the cumulative variance. Rotation could not be used since a single-factor structure emerged. For the original English ROCI scale, KMO = 0.89, Bartlett's Test of Sphericity χ^2 (66) = 1070.52, $p < .001$ results were obtained. Three factors were obtained, and the variance is 63.8% (Doron et al., 2012). For the ROCI Turkish Adaptation. KMO = 0.92, Bartlett's Test of Sphericity χ^2 (66) = 2758.685, $p < .001$ results were obtained. One factor was obtained, and the cumulative variance was 58.4% (İnözü and Trak 2015).

4.2.3. Exploratory Factor Analysis (EFA) for PROCSI

To test the validity of the PROCSI, the Principal Axis Factoring (PAF) method and Varimax rotation were used within the scope of Exploratory Factor Analysis (EFA). 24 items were included in the analysis, and the sample size was 271. To test its suitability for factor analysis, Bartlett's Test of Sphericity and the sample test Kaiser-Meyer-Olkin (KMO) Measure of Sampling test were applied. The KMO test result was .929, and Bartlett's Test of Sphericity (χ^2 (276) = 6149.230, $p < .001$). The scale's suitability for factor analysis was tested and was found appropriate. Three factors with eigenvalues over 1 were attained. The first factor showed 28.1%, the second 27.5%, and the third factor 12.9% variances. As a result of the analysis, a 3-factor structure emerged, and these factors account for 68.5 % of the cumulative variance. For the PROCSI Turkish Adaptation results of KMO = 0.92, Bartlett's Test of Sphericity χ^2 (276) = 2758.685, $p < .001$ results were obtained. One factor was obtained, and the variance was 46.2% (İnözü and Trak 2015).

4.2.4. Exploratory Factor Analysis (EFA) for ECR-R

The KMO test result was .930, and Bartlett's Test of Sphericity (χ^2 (630) = 8665.013, $p < .001$). The scale's suitability for factor analysis was tested and was found appropriate. Six factors were attained. These factors account for 71.2% of the cumulative variance. For the original version of ECR-Revisedtion results of KMO = 0.92, Bartlett's Test of Sphericity χ^2 (630) = 2200.34, $p < .001$ results were obtained. Two factors (Avoidant & Anxious Attachment) were obtained. The variance was 66.3% (Fraley, Waller, & Brennan, 2000). For the ECR-Revised Turkish Adaptation, results of KMO = 0.92, Bartlett's Test of Sphericity χ^2 (630) = 7063.97, $p < .001$, were obtained. Two factors were obtained (Avoidant & Anxious Attachment). The variance was 51.4% (Sümer, Güngör, & Deniz, 2009).

4.2.4.1. Exploratory Factor Analysis (EFA) for ECR-R_AVOID

To test the validity of the ECR-R/Avoidant Attachment subscale, the Principal Axis Factoring (PAF) method and Varimax rotation were used within the scope of Exploratory Factor Analysis (EFA). 16 items were included in the analysis, and the sample size was 271. Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO) Measure of Sampling tests were applied to test its suitability for factor analysis. The KMO test result was .920, and Bartlett's Test of Sphericity (χ^2 (153) = 3719.439, $p < .001$). The scale's suitability for factor analysis was tested and was found appropriate. Three factors were attained, and the eigenvalue of the third factor after the rotation process was over 1. The first factor showed 25.3%, the second factor 21.7%, and the third factor 15.7% variances. These factors account for 62.9% of the cumulative variance.

4.2.4.2. Exploratory Factor Analysis (EFA) for ECR-R_ANX

To test the validity of the ECR-R/Anxious Attachment subscale, the Principal Axis Factoring (PAF) method and Varimax rotation were used within the scope of Exploratory Factor Analysis (EFA). 16 items were included in the analysis, and the sample size was 271. Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO) Measure of Sampling tests were applied to test its suitability for factor analysis. The KMO test result was .932, and Bartlett's Test of Sphericity (χ^2 (153) = 3514.820, $p < .001$). The scale's suitability for factor analysis was tested and was found appropriate. Three factors were attained, and

the eigenvalue of the third factor after the rotation process was over 1. The first factor showed 32.7 %, the second factor 14.4 %, and the third factor 12.2 % variances. These factors account for 59.4% of the cumulative variance.

4.2.5. Exploratory Factor Analysis (EFA) for CAS-1

The Principal Axis Factoring (PAF) method and Varimax rotation are used within the scope of Exploratory Factor Analysis (EFA) to test the validity of the CAS-1 scale. 16 items were included in the analysis, and the sample size was 271. Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin (KMO) Measure of Sampling tests were applied to test its suitability for factor analysis. KMO test result was .844 and Bartlett's Test of Sphericity (χ^2 (120) = 2631.876, $p < .001$). The scale's suitability for factor analysis was tested and was found appropriate. 4 factors were attained, and the eigenvalue of the fourth factor after the rotation process was over 1. The first factor showed 22.5 %, the second factor 14.8 %, the third factor 14.4 %, and the fourth factor 8.1 % variances. These factors account for 59.9% of the cumulative variance. For the original version of CAS-1, there is no factor analysis report. The scales measure the fundamental components of the cognitive attentional syndrome according to the metacognitive theory (Wells, 2009). For the CAS-1 Turkish Adaptation, KMO = 0.84, Bartlett's Test of Sphericity χ^2 (120) = 1453.23, $p < .001$, results were obtained. Two factors were obtained. The variance is 56.8% (Aydın & Aydın, 2009).

4.3. Descriptive Statistics

Table 4. The Descriptive statistics analysis and normality test results of the scales.

Scales	Min - Max	M	SD	Skewness	Kurtosis
MACH	1.00 – 7.00	4.126	1.100	-.038	.129
CAS-1_CBS	1.00 – 8.00	4.170	1.701	.145	-.736
CAS-1_MCB	1.00 – 10.00	6.157	2.003	.107	-.333
PROCSI	1.00 – 5.00	1.880	0.888	.973	.211
ROCI	1.00 – 5.00	2.135	1.070	.875	-.001
ECR-R_AVOID	1.00 – 7.00	3.272	1.542	.422	-.375
ECR-R_ANX	1.00 – 7.00	3.781	1.558	.322	-.862

4.3.1. Descriptive Statistics for MACH IV

As a result of the descriptive test applied to the MACH IV scale, the average value was found to be M=4.12. The scoring method of the scale is between 1 and 7, and there is a medium-level tendency in evaluating the Machiavellian tendencies of these participants. Std. Deviation = 1.10 can be assessed as average and not a very homogeneous distribution. But there is not a very extreme distribution either. As a result of the skewness (Skewness=-0.038) and kurtosis (Kurtosis=0.129) evaluations, a distribution close to the normal curve was observed. Both values are in the range of ±1 (George & Mallery, 2010; Tabachnick & Fidell, 2013). The fact that the skewness value is quite close to 0 can be interpreted as the distribution is almost symmetrical, and the Kurtosis value is acceptable as 0. It is neither spread nor pointed it is very close to normality. As a result, the MACH IV scale shows a normal distribution, and it is appropriate to use parametric tests.

4.3.2. Descriptive Statistics for CAS-1

4.3.2.1 Descriptive Statistics for CAS-1 – Cognitive-Behavioral Strategies

As a result of the descriptive test applied to the CAS – Cognitive-Behavioral Strategies subscale, the mean value is (M=4.17), and Std. deviation (SD=1.70). As a result of the analysis related to normality, the Skewness value (0.145) was slightly skewed and positively oriented. The Kurtosis value (-0.736) has a slightly flat distribution, indicating that it is approximately normal (Tabachnick & Fidell, 2013). This result shows that the data is not excessively skewed or flat and, therefore, suitable for parametric analysis (Tabachnick & Fidell, 2013). It can be assumed that it complies with the normality assumption because the values are in the ±1 range (George & Mallery, 2010).

4.3.2.2. Descriptive Statistics for CAS-1 – Metacognitive Beliefs

As a result of the descriptive test applied to the CAS – Metacognitive Beliefs subscale, the mean value is (M=6.15), and Std. deviation (SD=2.00). As a result of the analysis related to normality, the Skewness value (0.107) was symmetrical and positively oriented. The Kurtosis value (-0.333) has a slightly flat distribution, indicating that it is approximately normal (Tabachnick & Fidell, 2013). This result shows that the data is not excessively skewed or flat and, therefore, suitable for parametric analysis (Tabachnick &

Fidell, 2013). It can be assumed that it complies with the normality assumption because the values are in the ±1 range (George & Mallery, 2010).

4.3.4. Descriptive Statistics for PROCSI

As a result of the descriptive test applied to the PROCSI scale, the average value was M=1.88. The scoring method of the scale is between 1 and 5. So, according to the mean value, there is a lower-level tendency for partner-related obsessive tendencies in participants. Std. Deviation (SD=0.89) can be evaluated as close to 1, which means there are differences, a variety of tendencies, and a moderate level of heterogeneity. The skewness value is (-0.973) and indicates a slight right-positive skew. Many of the participants gave low partner obsession scores, and a few of them gave very high scores. Below-average data and extreme values form the right tail (Field, 2018). The Kurtosis value (+0.211) showed a normal and peak-like distribution. The data are close to the Mean value, but at the same time, extreme data cannot be ignored (Tabachnick %Fidell, 2013). Since it is in the ±1 value range, it is accepted as close to normal (George & Mallery, 2010).

4.3.5. Descriptive Statistics for ROCI

The mean value obtained because of the descriptive test applied for ROCI was determined as (M=2.24), and Std. Deviation (SD=1.07). Variables between min. 1 and min. 5 are considered, and in the context of the mean score (M=2.24), romantic relationship obsession is at a low-medium level because of the participants' answers. Considering the Std. Deviation value (SD=1.07) is close to 1 partial difference, and a certain level of heterogeneity is seen in the answers (Pallant, 2020). When the Skewness value (0.875), which is positively skewed to the right, is examined, high scores were given by a small number of participants, and it was seen that it was in the right tail, and generally low and below-average data values were found (Field, 2018). However, there is no situation where normality will be disrupted. The Kurtosis value was found to be (-0.001). As a result of this value being very close to the normal distribution and 0, the data was distributed evenly in the center, and the effect of extreme values was not very much (Tabachnick & Fidell, 2013). Assuming that the values are by the normality assumption

because the values are in the ±1 value range (George & Mallery, 2010; Tabachnick & Fidell, 2013).

4.3.6. Descriptive Statistics for ECR-R

4.3.6.1. Descriptive Statistics for ECR-R - Avoidant Attachment

As a result of the descriptive test applied to the Avoidant Attachment subscale of the ECR-R scale, the mean value (M=3.27) and Std. Deviation (SD=1.54) was determined. The variables take values between the minimum. 1 and max. 7, and in the context of the mean score (M=3.27), the participants answered at a level that can be called moderate in terms of avoidance tendencies. When the Std. Deviation value (SD=1.54) is taken into consideration, it was determined that there were significant differences in the answers and that they were far from homogeneity (Pallant, 2020). The Skewness value (0.422), which was evaluated as slightly positive, created a skewed image to the right. Some participants gave high scores to the items measuring avoidance tendencies, but the majority were clustered below the Mean (Field, 2018). The Kurtosis value (-0.375) has a flat image compared to the normal distribution. It can be assumed that the values are in line with the normality assumption because the values are within the ±1 range (George & Mallery, 2010; Tabachnick & Fidell, 2013).

4.3.6.2. Descriptive Statistics for ECR-R - Anxious Attachment

As a result of the descriptive test applied to the ECR-R/Anxious Attachment scale, the average value is M=3.78. The fact that the Mean value is at an average level also indicates a moderate level of anxious attachment tendencies. Considering the Std. Deviation (SD=1.56) It is observed that there is a lot of diversity and a high level of individual differences in the answers given. As a result of the skewness (Skewness=0.322) and kurtosis (Kurtosis=-0.862) evaluations, both values are in the range of ±1 (George & Mallery, 2010; Tabachnick & Fidell, 2013). The Skewness value of 0.322 is positive-right-skewed. That indicates the overall score is around and/or below the general. However, anxious attachment tendencies were widely distributed (low-high), but the tendency was generally moderate. However, there are individuals with extreme values (Field, 2018). The kurtosis value (-0.862) is flat, with fewer extremes and a wider range

of scores compared to a normal distribution (Tabacnick & Fidell, 2013). However, there appears to be a wide range of attachment anxiety tendencies.

4.4. Normality Tests

Table 5. Test of Normality for Scales

Tests of Normality

	Kolmogorov-Smirnov[a]		Shapiro-Wilk	
	Statistic	**Sig.**	**Statistic**	**Sig.**
MACH	,075	<,001	,991	,113
CAS-1_CBS	,055	,045	,980	<,001
CAS-1_MCB	,068	,004	,978	<,001
ECR-R_ANX	,088	<,001	,958	<,001
ECR-R_AVOID	,081	<,001	,956	<,001
PROCSI	,161	<,001	,874	<,001
ROCI	,144	<,001	,893	<,001

4.4.1. Test for Normality for MACH IV

In line with the normality analysis, the Shapiro-Wilk test result of the MACH IV scale was examined and concluded as W (271) = 0.991, p = .113. Since the p-value (p = .113) is greater than .05, it is seen that the MACH IV distribution does not deviate from the distribution accepted as normal in statistical terms. MACH IV was compatible with the normal distribution. A consistent result was obtained with the previously applied Skewness (-0.038) and Kurtosis (0.129) test values. Parametric tests are suitable for use with the MACH IV variable. (Field, 2018; Tabachnick & Fidell, 2013).

4.4.2. Test for Normality for CAS-1

4.4.2.1. Test for Normality for CAS-1 - Cognitive-Behavioral Strategies

The Shapiro-Wilk test result of the CAS - Cognitive-Behavioral Strategies subscale was examined and concluded as W (271) = 0.980, p = .001. Since the p-value (p = .001) is smaller than .05, it shows the CAS distribution deviates from the distribution accepted

as normal in statistical terms. Even though the obtained result was with the previously applied Skewness (0.145) and Kurtosis (-0.736) test values, CAS was not coherent with the normal distribution. The application of non-parametric tests is more suitable for the CAS values (Ghasemi & Zahediasl, 2012).

4.4.2.2. Test for Normality for CAS-1 – Metacognitive Beliefs

The Shapiro-Wilk test result of the CAS-1 – Metacognitive Beliefs subscale was examined and concluded as W (271) = 0.978, p = .001. Since the p-value (p = .001) is smaller than .05, it shows the CAS-1 distribution deviates from the distribution accepted as normal in statistical terms. Even though the obtained result was with the previously applied Skewness (0.107) and Kurtosis (-0.333) test values, CAS-1 – Metacognitive Beliefs was not coherent with the normal distribution. The application of non-parametric tests is more suitable for the CAS-1 values (Ghasemi & Zahediasl, 2012).

4.4.4. Test for Normality for ECR-R

4.4.4.1. Test for Normality for ECR-R/Anxious Attachment

The Shapiro-Wilk test result of the ECR-R/Anxious Attachment subscale was examined and concluded as W (271) = 0.958, p = .001. Since the p-value (p = .001) is smaller than .05, it is seen that the ECR-R/Anxious Attachment distribution deviates from the distribution accepted as normal in statistical terms. Even though the obtained result was with the previously applied Skewness (0.322) and Kurtosis (-0.862) test values, ECR-R/Anxious Attachment was not coherent for the normal distribution. ECR-R/Anxious Attachment value violates the assumption of parametric tests (Razali & Wah, 2011; Field, 2018). So, applying for non-parametric tests is more appropriate for the ECR-R/Anxious Attachment values (Ghasemi & Zahediasl, 2012).

4.4.4.2. Test for Normality for ECR-R/Avoidant Attachment

The Shapiro-Wilk test result of the ECR-R/Avoidant Attachment subscale was examined and concluded as W (271) = 0.956, p = .001. Since the p-value (p = .001) is smaller than .05, it is seen that the ECR-R / Avoidant Attachment distribution deviates from the distribution accepted as normal in statistical terms. Even though the obtained result was with the previously applied Skewness (0.422) and Kurtosis (-0.375) test values,

ECR-R / Avoidant Attachment was not coherent for the normal distribution. ECR-R/Avoidant Attachment value violates the assumption of parametric tests (Razali & Wah, 2011; Field, 2018). So, applying for non-parametric tests is more appropriate for the ECR-R/Avoidant Attachment values (Ghasemi & Zahediasl, 2012).

4.4.6. Test for Normality for PROCSI

The Shapiro-Wilk test result of the PROCSI was examined and concluded as W (271) = 0.874, p = .001. Since the p-value (p = .001) is smaller than .05, it is seen that the PROCSI distribution deviates from the distribution accepted as normal in statistical terms. Even though the obtained result was with the previously applied Skewness (0.422) and Kurtosis (-0.375) test values, PROCSI was not coherent for the normal distribution. PROCSI value violates the assumption of parametric tests (Razali & Wah, 2011; Field, 2018). So, applying for non-parametric tests is more appropriate for the PROCSI values (Ghasemi & Zahediasl, 2012).

4.4.7. Test for Normality for ROCI

The Shapiro-Wilk test result of the ROCI was examined and concluded as W (271) = 0.893, p = .001. Since the p-value (p = .001) is smaller than .05, it is seen that the ROCI distribution deviates from the distribution accepted as normal in statistical terms. Even though the obtained result was with the previously applied Skewness (0.875) and Kurtosis (-0.001) test values, ROCI was not coherent for the normal distribution. ROCI value violates the assumption of parametric tests (Razali & Wah, 2011; Field, 2018). So, applying for non-parametric tests is more appropriate for the ROCI values (Ghasemi & Zahediasl, 2012).

4.5. Independent Samples Test

4.5.1. Independent Samples T-test for MACH IV

The Independent Samples T-test was applied to understand whether there is a difference between gender and Machiavellian tendencies. The mean scores that female participants (N = 149) got from the MACH scale (M = 4.32, SD = 1.02) is higher than

male participants (N = 122) (M = 3.89, SD =1.15). Levene's Test for Equality of Variances (F = 4.027, p = .046) is significant. There is no equality between the two groups. As a result, the difference between female and male participants is statistically significant (t (244.413) = 3.221, p < .001). The mean difference is 0.430, and the 95% Confidence Interval of the Difference is between 0.17 and 0.69. According to Cohen's d value (d = 0.398) in Independent Samples Effect Sizes, it shows an effect size evaluated as small-medium (Cohen, 1988). Similarly, Hedges' correction value (g = 0.397) and Glass's delta value (Δ = 0.374) support this result.

4.6. Mann–Whitney U Test

4.6.1. Mann–Whitney U Test for ROCI

Table 6. Mann–Whitney U Test for ROCI

	Z	p	r
ROCI	-2.098	.036	r = ≈ 0.13

The nonparametric Mann-Whitney U test was applied to measure the variability tendencies of the ROCI scale, measuring ROCD tendencies according to the independent group as gender. The ROCI Mean Rank of women is 144.66, and the Mean Rank of men is 125.43. The statistical examination results show that Mann-Whitney U = 7799,000, Z = -2,098, p = .036 values are attained. The effect size of ROCI is r = ≈ 0.13.

4.6.2. Mann-Whitney U Test for PROCSI

Table 7. Mann–Whitney U Test for PROCSI

	Z	p	r
PROCSI	-1.590	.112	r = ≈ 0.10

The non-parametric Mann-Whitney U test was applied to measure the variability tendencies of the PROCSI scale, which measures PROCSI trends, according to the independent group, gender. As a result of the test, the PROCSI Mean Rank results of women are 129.71, and the Mean Rank of men is 143.68. As a result of the analysis,

Mann-Whitney U = 8152.000, Z = -1.590, p = .112 values are attained. The effect size of PROCSI is r = ≈ 0.10.

4.6.3. Mann-Whitney U Test for ECR-R

4.6.3.1. Mann-Whitney U Test for ECR-R/Avoidant Attachment

Table 8. Mann–Whitney U Test for ECR-R/Avoidant Attachment

	Z	P	r
ECR_AVOID	-0.732	.464	r = ≈ 0.04

The non-parametric Mann-Whitney U test was applied to measure the tendencies of the Avoidant attachment, the subscale of the ECR-R, and the independent group by gender. As a result of the test, the Mean Rank results of the ECR-R/Avoidant tendencies of the women are 139.11, and the Mean Rank of men is 132.20. As a result of the analysis, Mann-Whitney U = 8626.000, Z = -.732, and p = .464 values are attained. The effect size of ECR-R/Avoidant Attachment is r = ≈ 0.04.

4.6.3.2. Mann-Whitney U Test for ECR-R/Anxious Attachment

Table 9. Mann-Whitney U Test for ECR-R/Anxious Attachment

	Z	p	r
ECR_ANX	-2.987	.003	r = ≈ 0.18

The non-parametric Mann-Whitney U test was applied to measure the tendencies of the Anxious attachment, the subscale of the ECR-R, and the independent group by gender. As a result of the test, the Mean Rank results of the ECR-R/Anxious tendencies of the women are 148,68, and the Mean Rank of men is 120,51. Women's anxious attachment tendencies are higher than men's on the mean rank grounds. As a result of the analysis, Mann-Whitney U = 7199,000, Z = -2,987, and p = .003 values are attained. The effect size of ECR-R/Avoidant Attachment is r = ≈ 0.18.

4.6.4. Mann-Whitney U Test for CAS-1

4.6.4.1. Mann-Whitney U Test for CAS-1 – Metacognitive Beliefs

Table 10. Mann-Whitney U Test for CAS-1 – Metacognitive Beliefs

	Z	p	r
CAS-1_MCB	-4.985	<.001	r = ≈ 0.30

The non-parametric Mann-Whitney U test was applied to measure the symptoms of the CAS-1 – Metacognitive Beliefs and the independent group by gender. As a result of the test, the Mean Rank results of the CAS-1 symptoms of the female are 157,46, and the Mean Rank of the male is 109,79. Women's CAS-1 symptoms are higher than men's on the mean rank grounds. As a result of the analysis, Mann-Whitney U = 5891,000, Z = -4,985, and p < .001 values were attained. The effect size of CAS-1 – Metacognitive Beliefs is r = ≈ 0.30.

4.6.4.2 Mann-Whitney U Test for CAS-1 – Cognitive Behavioral Strategies

Table 11. Mann-Whitney U Test for CAS-1 – Cognitive Behavioral Strategies

	Z	p	r
CAS-1_CBS	-3.458	<.001	r = ≈ 0.21

The non-parametric Mann-Whitney U test was applied to measure the symptoms of the CAS-1 – Cognitive Behavioral Strategies and the independent group by gender. As a result of the test, the Mean Rank results of the CAS-1 symptoms of the female are 150,89, and the Mean Rank of the male is 117,81. Women's CAS-1 symptoms are higher than men's on the mean rank grounds. As a result of the analysis, Mann-Whitney U = 6870,000, Z = -3,458, and p < .001 values were attained. The effect size of CAS-1 – Cognitive Behavioral Strategies is r = ≈ 0.21.

4.7. Nonparametric Correlations

According to the normality distribution analysis test results, *CAS-1 (MCB & CBS), ROCI, PROCSI*, and *ECR-R (Avoidant & Anxious Attachment)* variables are not normally distributed. Therefore, the nonparametric Spearman's Rho correlation was utilized to evaluate the relationship between the variables.

Table 12. Spearman's Rho Correlations

Correlations

		1	2	3	4	5	6	7
Spearman's rho	**ROCI**							
	PROCSI	,824**						
	MACH	-,450**	-,502**					
	ECR-R_AVOID	,664**	,718**	-,589**				
	ECR-R_ANX	,622**	,573**	-,376**	,682**			
	CAS-1_CBS	,532**	,564**	-,366**	,623**	,718**		
	CAS-1_MCB	,552**	,503**	-,286**	,546**	,677**	,631**	

**. Correlation is significant at the 0.01 level (2-tailed). N = 271

4.7.1. Spearman's Rho Correlations for CAS-1 & ROCI

According to Spearman's Rho correlation analysis results for CAS-1 & ROCI;

CAS-1_MCB and ROCI have a significant ($p < .001$), positive, and moderate ($\rho = .552$) correlational relationship.

CAS-1_CBS and ROCI have a significant ($p < .001$), positive, and moderate ($\rho = .532$) correlational relationship.

4.7.2. Spearman's Rho Correlations for CAS-1 & PROCSI

CAS-1_MCB and PROCSI have a significant ($p < .001$), positive, and moderate ($\rho = .503$) correlational relationship.

CAS-1_CBS and PROCSI have a significant ($p < .001$), positive, and moderate ($\rho = .564$) correlational relationship.

4.7.3. Spearman's Rho Correlations for CAS-1 & MACH

According to Spearman's Rho correlation analysis results for CAS-1_MCB and MACH, a significant ($p < .001$), negative, and moderate ($\rho = -.286$) correlational relationship was found between these two variables. CAS-1_CBS and MACH, a significant ($p < .001$), negative, and moderate ($\rho = -.366$) correlational relationship was found between these two variables.

4.7.4. Spearman's Rho Correlations for CAS-1 & ECR-R

According to Spearman's Rho correlation analysis results for CAS-1 & ECR-R;

CAS-1_MCB and ECR-R_ANX have a significant ($p < .001$), positive, and moderate/high ($\rho = .677$) correlational relationship.

CAS-1_CBS and ECR-R_ANX have a significant ($p < .001$), positive, and moderate/high ($\rho = .718$) correlational relationship.

CAS-1_MCB and ECR-R_AVOID have a significant ($p < .001$), positive, and moderate ($\rho = .546$) correlational relationship.

CAS-1_CBS and PROCSI have a significant ($p < .001$), positive, and moderate ($\rho = .623$) correlational relationship.

4.7.5. Spearman's Rho Correlations for ROCI & PROCSI

ROCI and PROCSI have a significant ($p < .001$), positive, and high ($\rho = .824$) correlational relationship.

4.7.6. Spearman's Rho Correlations for ROCI & ECR-R

ROCI and ECR-R/Avoidant, a significant ($p < .001$), positive, and moderate/high ($\rho = .664$) correlational relationship was found between these two variables.

There is a significant ($p < .001$), positive, and moderate/high ($\rho = .622$) correlational relationship between ROCI and ECR-R/Anxious variables.

4.7.7. Spearman's Rho Correlations for PROCSI & ECR-R

PROCSI and ECR-R/Avoidant, a significant ($p < .001$), positive, and high ($\rho = .718$) correlational relationship was found between these two variables.

PROCSI and ECR-R/Anxious have a significant ($p < .001$), positive, and moderate ($\rho = .573$) correlational relationship.

4.7.8. Spearman's Rho Correlations for MACH IV & ECR-R

MACH IV and ECR-R/Avoidant, a significant ($p < .001$), negative, and moderate ($\rho = -.589$) correlational relationship was found between these two variables.

MACH IV and ECR-R/Anxious have a significant ($p < .001$), negative, and moderate ($\rho = -.376$) correlational relationship.

4.7.9. Spearman's Rho Correlations for MACH IV & ROCI, and PROCSI

MACH IV and ROCI, a significant ($p < .001$), negative, and moderate ($\rho = -.450$) correlational relationship was found between these two variables.

MACH IV and PROCSI have a significant ($p < .001$), negative, and moderate ($\rho = -.502$) correlational relationship.

4.7.10. Spearman's Rho Correlations for CAS-1 Subscales

According to Spearman's Rho correlation analysis results for CAS-1 subscales, a significant ($p < .001$), positive, and moderate ($\rho = .631$) correlational relationship was found between these two variables.

4.7.11. Spearman's Rho Correlations for ECR-R Subscales

According to Spearman's Rho correlation analysis results for ECR-R subscales (Avoidant & Anxious), a significant ($p < .001$), positive, and moderate ($\rho = .682$) correlational relationship was found between these two variables.

4.8. Regression

4.8.1. Simple Linear Regression

4.8.1.1. Simple Linear Regression Analysis for CAS-1 Subscales (Cognitive Behavioral Strategies & Metacognitive Beliefs)

Table 13. Simple linear regression for CAS-1 Subscales (Cognitive Behavioral Strategies & Metacognitive Beliefs)

Predictor	R	R^2	Adj. R^2	F	p (F)	B	β	t	p	DW	Cohen's f^2
CAS-1_CBS	.688	.473	.471	241.805	<.001	.810	.688	15.550	<.001	1.743	.897

A Simple Linear Regression analysis was conducted to understand the predictive effect of CAS-1 – Cognitive Behavioral Strategies on the CAS-1 – Metacognitive Beliefs. Considering the Model summary, the CAS-1_CBS variable explains 47.3% of the total variance on the CAS-1_MCB ($R^2 = .473$). Adjusted R Square ($R^2 = .471$) proposes high generalizability of the model. Std. error of the Estimate (1,456) and Durbin-Watson (1,743) are in the ideal range, and the risk of autocorrelation is low (Field, 2018). According to the ANOVA, and when the general significance test was examined ($F(1,269) = 241.805$, $p < .001$), the values were found at a significant level. Analyzing the Regression Coefficient, Unstandardized Coefficients ($B = 0.810$) ($t = 15.550$, $p < .001$) and Standardized Coefficients ($\beta = .688$) indicate strong, positive statistical relationships. For all that, with each unit increase in CAS-1_CBS, the value of CAS-1_MCB increases by 0.81. 95,0% Confidence Interval for B value is between 0.708 and 0.913. Both VIF and Tolerance outcomes are 1.000. Cohen's $f^2 = 0.897$ effect size is measured to examine the effect size of CAS-1_CBS on CAS-1_MCB.

4.8.1.2. Simple Linear Regression Analysis for MACH & ROCI & PROCSI

Table 14. Simple linear regression for MACH & ROCI

Predictor	R	R^2	Adj. R^2	F	p (F)	SE	B	β	t	p	DW	Cohen's f^2
MACH	.426	.181	.178	59.581	< .001	.054	-.414	-.426	-7.719	< .001	1.730	.221

A simple linear regression analysis was performed to investigate the predictive effect of Machiavellianism (MACH) on romantic obsessive-compulsive symptoms (ROCI). The model summary showed a moderate negative correlation between MACH and ROCI scores with a correlation coefficient of R = -.426, indicating a statistically significant inverse relationship ($p < .001$). The coefficient of determination ($R^2 = .181$) reveals that approximately 18.1% of the variance in ROCI scores is explained by MACH alone. The adjusted R^2 value of .178 supports the stability and generalizability of this model to the population, accounting for potential overfitting. The standard error of the estimate was 0.970, representing the average distance between observed ROCI scores and those predicted by the model. The Durbin-Watson statistic was 1.730. ANOVA results confirmed that the overall regression model is statistically significant, $F(1, 269) = 59.581$, $p < .001$. Examining the regression coefficients, the unstandardized coefficient (B = -0.414, SE = 0.054) indicates that for each one-unit increase in Machiavellianism, the predicted ROCI score decreases by 0.414 units, holding other factors constant. The standardized beta coefficient ($\beta = -0.426$) confirms the moderate effect size of MACH on ROCI. Collinearity diagnostics showed no multicollinearity issues, with tolerance and VIF values equal to 1.000, which is expected in a single-predictor model. Residual analysis revealed predicted values ranged between approximately 0.95 and 3.43, with residuals symmetrically distributed around zero (mean = 0) and a standard deviation of 0.969, indicating a good fit of the model to the data without systematic bias.

Table 15. Simple linear regression for MACH & PROCSI

Predictor	R	R^2	Adj. R^2	F	p (F)	SE	B	β	t	p	DW	Cohen's f^2
MACH	.429	.184	.181	60.720	< .001	.044	-.346	-.429	-7.792	< .001	1.984	.225

A simple linear regression analysis examined the predictive effect of Machiavellianism (MACH) on partner-related obsessive-compulsive symptoms (PROCSI). Descriptive statistics revealed a mean PROCSI score of 1.880 (SD = 0.888), and a mean MACH score of 4.126 (SD = 1.101), indicating moderate average levels within the sample. The model summary indicated that MACH explains approximately 18.4% of the variance in PROCSI scores (R^2 = .184), with an adjusted R^2 of .181, confirming the model's generalizability and stability. The standard error of the estimate was 0.804, reflecting the average deviation of observed PROCSI values from those predicted by the model. The Durbin-Watson value was 1.984. ANOVA results demonstrated the overall regression model was statistically significant, $F(1, 269) = 60.720$, $p < .001$. The unstandardized regression coefficient for MACH was B = -0.346 (SE = 0.044), indicating that for each one-unit increase in Machiavellianism, PROCSI scores decrease by 0.346 units on average. The standardized beta coefficient was β = -.429, reflecting a moderate effect size. Collinearity diagnostics revealed no multicollinearity concerns, with tolerance and variance inflation factor (VIF) both equal to 1.000, as expected in a single-predictor regression. Residual statistics indicated that predicted PROCSI values ranged from approximately 0.88 to 2.96, with residuals symmetrically distributed around zero (mean = 0), and a standard deviation of 0.80, supporting model adequacy and absence of systematic bias.

4.8.1.3. Simple Linear Regression Analysis for MACH & CAS-1 (Metacognitive Beliefs & Cognitive Behavioral Strategies)

Table 16. Simple linear regression for MACH & CAS-1_CBS

Predictor	R	R^2	Adj. R^2	F	p (F)	B	β	t	p	DW	Cohen's f^2
MACH	.344	.118	.115	36.150	< .001	-.532	-.344	-6.012	< .001	2.054	.134

A simple linear regression analysis examined the predictive effect of Machiavellianism (MACH) on the cognitive behavioral strategies subscale of cognitive attentional syndrome (CAS_CBS). Descriptive statistics revealed a mean CAS_CBS score of 4.171 (SD = 1.701), and a mean MACH score of 4.126 (SD = 1.101), indicating moderate average levels within the sample. The model summary indicated that MACH explains approximately 11.8% of the variance in CAS_CBS scores (R^2 = .118), with an adjusted R^2 of .115, confirming the model's generalizability and stability. The standard error of the estimate was 1.600, reflecting the average deviation of observed CAS_CBS values from those predicted by the model. The Durbin-Watson value was 2.054, close to the ideal value of 2, indicating no significant autocorrelation in residuals (Field, 2018). ANOVA results demonstrated the overall regression model was statistically significant, $F(1, 269) = 36.150$, $p < .001$. The unstandardized regression coefficient for MACH was B = -0.532 (SE = 0.088), indicating that for each one-unit increase in Machiavellianism, CAS_CBS scores decrease by 0.532 units on average. The standardized beta coefficient was β = -.344, reflecting a moderate effect size. Collinearity diagnostics revealed no multicollinearity concerns, with tolerance and variance inflation factor (VIF) both equal to 1.000, as expected in a single-predictor regression. Residual statistics indicated that predicted CAS_CBS values ranged from approximately 2.64 to 5.83, with residuals symmetrically distributed around zero (mean = 0), and a standard deviation of 1.597, supporting model adequacy and absence of systematic bias.

Table 17. Simple linear regression for MACH & CAS-1_MCB

Predictor	R	R^2	Adj. R^2	F (1,269)	p (F)	B	β	t	p	DW	Cohen's f^2
MACH	.315	.099	.096	29.567	< .001	-.573	-.315	-5.438	< .001	1.770	.110

A simple linear regression analysis was conducted to examine the predictive effect of Machiavellianism (MACH) on the metacognitive beliefs, subscale of the cognitive attentional syndrome (CAS_MCB). Descriptive statistics revealed a mean CAS_MCB score of 6.158 (SD = 2.003), and a mean MACH score of 4.126 (SD = 1.101), indicating moderate average levels within the sample. The model summary indicated that MACH explains approximately 9.9% of the variance in CAS_MCB scores (R^2 = .099), with an adjusted R^2 of .096, confirming the model's generalizability and stability. The standard error of the estimate was 1.905, reflecting the average deviation of observed CAS_MCB values from those predicted by the model. The Durbin-Watson value was 1.770. ANOVA results demonstrated that the overall regression model was statistically significant, F (1, 269) = 29.567, p < .001. The unstandardized regression coefficient for MACH was B = -0.573 (SE = 0.105), indicating that for each one-unit increase in Machiavellianism, CAS_MCB scores decrease by 0.573 units on average. The standardized beta coefficient was β = -.315, reflecting a moderate effect size. The t-test for MACH was highly significant (t = -5.438, p < .001), and the 95% confidence interval for B ranged from -0.780 to -0.365, confirming precision in the estimate. Collinearity diagnostics revealed no multicollinearity concerns. Residual statistics indicated that predicted CAS_MCB values ranged from approximately 4.51 to 7.95, with residuals symmetrically distributed around zero (mean = 0), and a standard deviation of 1.902.

4.8.2. Multiple Regression

4.8.2.1. Multiple Regression Analysis for CAS-1 (MCB & CBS) & ROCI

Table 18. Multiple & simple linear regression for CAS-1 (MCB & CBS) & ROCI

Model Type	Predictor	R	R^2	Adj. R^2	B	F	p (F)	β	t	p	DW	Cohen's f^2
Simple	**CAS-1_CBS**	.547	.299	.296	.256	114.608	<.001	.547	10.702	<.001	1.873	.426
Simple	**CAS-1_MCB**	.570	.325	.322	.260	129.466	<.001	.570	11.383	<.001	1.873	.481
Multiple	**Both**	.609	.370	.366		78.831	<.001				1.873	.587
Multiple	**CAS-1_CBS**				.185			.293	4.391	<.001		
Multiple	**CAS-1_MCB**				.197			.368	5.516	<.001		

A multiple linear regression analysis was performed to investigate the simultaneous predictive effect of Cognitive Attentional Syndrome subcomponents—Metacognitive Beliefs (CAS_MCB) and Cognitive Behavioral Strategies (CAS_CBS)—on relationship obsessive-compulsive symptoms (ROCI). The model summary revealed that together, CAS_MCB and CAS_CBS explain 37 % of the variance in ROCI scores ($R = .609$, $R^2 = .370$). The adjusted R^2 value of .366 suggests that the model maintains strong generalizability beyond the sample, indicating that approximately 36.6 % of the variance in ROCI. The standard error of the estimate was 0.74157, reflecting a relatively low average distance between the observed ROCI values and the predicted values based on the regression equation. The Durbin-Watson statistic was 1.897. ANOVA results is $F (2, 268) = 59.766$, $p < .001$. Examining the regression coefficients, both predictors demonstrated statistically significant effects on ROCI. Examination of regression coefficients showed both CAS_CBS ($B = 0.185$, $\beta = .293$, $t = 4.391$, $p < .001$) and CAS_MCB ($B = 0.197$, $\beta = .368$, $t = 5.516$, $p < .001$) significantly predicted ROCI scores. For every unit increase in CAS_CBS, ROCI scores increase by approximately 0.185 units, controlling for CAS_MCB. Similarly, every unit increase in CAS_MCB predicts a 0.197 unit increase in ROCI, controlling for CAS_CBS.

4.8.2.2. Multiple Linear Regression Analysis for CAS-1 (MCB & CBS) & PROCSI

Table 19. Multiple linear regression for CAS-1 (CBS &CBS) & PROCSI

Model Type	Predictor	R	R^2	Adj. R^2	B	F	p (F)	β	t	p	DW	Cohen's f^2
Simple	**CAS-1_CBS**	.528	.279	.276	.277	104.536	<.001	.528	10.226	<.001	1.897	.388
Simple	**CAS-1_MCB**	.489	.239	.235	.232	83.944	<.001	.489	9.165	<.001	1.897	.314
Multiple	**Both**	.555	.308	.303		59.766	<.001				1.897	.445
Multiple	**CAS-1_CBS**				.190			.364	5.195	<.001		
Multiple	**CAS-1_MCB**				.106			.238	3.407	<.001		

A multiple linear regression analysis was conducted to examine the predictive effect of the components of Cognitive Attentional Syndrome—Metacognitive Beliefs (CAS_MCB) and Cognitive Behavioral Strategies (CAS_CBS)—on partner-related obsessive-compulsive symptoms (PROCSI). The model summary indicated a moderate relationship, with a correlation coefficient of R = .555. Together, these predictors explained 30.8% of the variance in PROCSI scores (R^2 = .308), with an adjusted R^2 of .303, indicating that approximately 30.3% of the variability in PROCSI is accounted for by CAS_MCB and CAS_CBS. The standard error of the estimate was 0.742, reflecting an acceptable average deviation between observed and predicted scores. The Durbin-Watson statistic was 1.897, indicating no serious autocorrelation in residuals. ANOVA results confirmed the overall significance of the regression model, $F(2, 268) = 59.766$, $p < .001$. Regarding individual predictors, the unstandardized coefficient for CAS_CBS was B = 0.190 (SE = 0.037), indicating that a one-unit increase in cognitive behavioral strategies is associated with a 0.190-unit increase in PROCSI scores, controlling for CAS_MCB. This effect was statistically significant (β = .364, t = 5.195, $p < .001$), with a 95% confidence interval ranging from 0.118 to 0.262. Similarly, the unstandardized coefficient for CAS_MCB was B = 0.106 (SE = 0.031), suggesting that a one-unit increase in metacognitive beliefs corresponds to a 0.106-unit increase in PROCSI, controlling for CAS_CBS. This predictor also reached statistical significance (β = .238, t = 3.407, $p < .001$), with a 95% confidence interval from 0.045 to 0.167. Residual statistics

revealed that predicted values ranged between 0.73 and 3.01, and residuals were symmetrically distributed with a mean of approximately zero and a standard deviation of 0.74. These findings support the adequacy of the model and suggest the absence of systematic bias in prediction.

4.8.2.3. Multiple Regression Analysis for ROCI & ECR-R (Avoidant & Anxious Attachments)

Table 20. Multiple regression for ROCI & ECR-R (Avoidant & Anxious Attachments)

Predictor	B	β	t	p	R	R^2	Adj. R^2	F	p (F)	DW	Cohen's f^2
AVOID	.242	.349	5.385	<.001	.696	.485	.481	126.235	<.001	1.798	1.29
ANX	.274	.399	6.160	<.001	.696	.485	.481	126.235	<.001	1.798	1.29

A Multiple Linear Regression study was conducted to understand the effect of ECR-R (Avoidant & Anxious Attachment) on the dependent variable ROCI. As a result of this analysis, it was seen that both subscales of ECR-R predict the ROCI scale significantly and positively ($R = .696$, $p < .001$). The ECR-R variables explain 48,5 % of the variance of the ROCI scores ($R^2 = .485$). According to the Regression Coefficient of ECR-R (AVOID) (B = .242), with each unit increase in ECR-R (AVOID), the value of ROCI increases by 0.242. And the Regression Coefficient of ECR-R (ANX) (B = .274), with each unit increase in ECR-R (ANX), indicates that the ROCI increases by 0.274. ECR-R (AVOID & ANX), being a independent variable, is an effective predictor of ROCI ($F(2,268) = 126,235$). According to the Durbin-Watson (1,795) result, it is in the ideal range, and there is no autocorrelation problem. To examine the effect size, Cohen's $f^2 = 0.942$ effect size was calculated.

4.8.2.4. Multiple Regression Analysis for PROCSI & ECR-R (AVOID & ANX)

Table 21. Multiple regression for PROCSI & ECR-R (AVOID & ANX)

Predictor	B	β	t	p	R	R^2	Adj. R^2	F	p (F)	DW	Cohen's f^2
AVOID	.283	.492	7.239	<.001	.658	.433	.429	102.328	<.001	1.968	.763
ANX	.117	.206	3.028	.003	.658	.433	.429	102.328	<.001	1.968	.763

A Multiple Linear Regression study was conducted to understand the effect of ECR-R (Avoidant & Anxious Attachment) on the dependent variable PROCSI. As a result of this analysis, it was seen that both subscales of ECR-R predict the PROCSI scale significantly and positively ($R = .658$, $p < .001$). The ECR-R variables explain 43,3 % of the variance of the PROCSI scores ($R^2 = .433$). According to the Regression Coefficient of ECR-R (AVOID) (B = .283), with each unit increase in ECR-R (AVOID), the value of PROCSI increases by 0.283. The Regression Coefficient of ECR-R (ANX) (B = .117), with each unit increase in ECR-R (ANX), indicates that the value of PROCSI increases by 0.117. ECR-R (AVOID & ANX), being a dependent variable, is an effective predictor of PROCSI (F (2,268) = 102,328). According to the Durbin-Watson (1,968) result, it is in the ideal range, and there is no autocorrelation problem. Cohen's $f^2 = 0.763$ effect size is measured to examine the effect of ECR-R (ANX & AVOID) on PROCSI.

4.8.3. Hierarchical Regression

4.8.3.1. Hierarchical Multiple Regression for CAS-1, MACH and ROCI

Table 22. Hierarchical multiple regression for CAS-1, MACH, and ROCI

Model	Variable	B	SE	β	t	p	R^2	Adj. R^2	ΔR^2	f^2	VIF
1.	**Constant***	3.844	.229		16.784	<.001	.181	.178	.181	≈ .221	
	MACH	-.414	.054	-.426	-7.719	<.001					1.000
2.	**Constant***	1,388	.304		4.568	<.001	.421	.414	.240	≈ .414	
	MACH	-.234	.049	-.240	-4.809	<.001					1.149
	CAS-1_CBS	.148	.041	.235	3.598	<.001					1.966
	CAS-1_MCB	.178	.035	.333	5.152	<.001					1.924

Constant = ROCI*

A hierarchical multiple regression analysis was conducted to examine the predictive effects of Machiavellianism (MACH) and Cognitive Attentional Syndrome subscales (CAS_CBS and CAS_MCB) on obsessive-compulsive symptoms related to romantic relationships (ROCI).

Model 1: Machiavellianism (MACH) was entered as the sole predictor. The model was statistically significant, $F(1, 269) = 59.581$, $p < .001$, explaining 18.1% of the variance in ROCI ($R^2 = .181$, Adjusted $R^2 = .178$). Machiavellianism showed a significant negative association with ROCI ($\beta = –.426$, $t = –7.719$, $p < .001$), indicating that higher Machiavellian traits predict lower obsessive-compulsive symptoms related to romantic relationships.

Model 2: Cognitive Attentional Syndrome subscales, CAS_CBS (Cognitive Behavioral Strategies) and CAS_MCB (Metacognitive Beliefs), were added as predictors alongside

MACH. This model significantly improved prediction of ROCI, $F(3, 267) = 64.602$, $p < .001$, explaining 42.1% of the variance ($R^2 = .421$, Adjusted $R^2 = .414$). The addition of CAS subscales led to a significant increase in explained variance ($\Delta R^2 = .239$, F change = 55.124, $p < .001$).

In this full model, Machiavellianism remained a significant negative predictor of ROCI ($\beta = -.240$, $t = -4.809$, $p < .001$), though its effect size decreased compared to Model 1. Both CAS_CBS ($\beta = .235$, $t = 3.598$, $p < .001$) and CAS_MCB ($\beta = .333$, $t = 5.152$, $p < .001$) are significant. Tolerance values ranged between 0.509 and 1.000, and variance inflation factor (VIF) values ranged from 1.000 to 1.966. Residuals showed a minimum of –2.244 and a maximum of 2.037, with a mean residual approximately zero (M = 0.000, SD = 0.815). Standardized residuals were within ±3 standard deviations (min. –2.739, max. 2.486), supporting the assumptions of normality and homoscedasticity. Predicted ROCI values ranged from 0.58 to 3.74 (M = 2.14, SD = 0.69).

4.8.3.2. Hierarchical Multiple Regression for CAS-1, MACH and PROCSI

Table 23. Hierarchical multiple regression for CAS-1, MACH, and PROCSI

Model	Variable	B	SE	β	t	p	R^2	Adj. R^2	ΔR^2	f^2	VIF
1.	**Constant***	3.309	.190		17.438	<.001	.184	.181	.184	≈ .225	
	MACH	-.346	.044	-.429	-7.792	<.001					1.000
2.	**Constant***	1.558	.263		5.922	<.001	.369	.362	.185	≈ .293	
	MACH	-.212	.042	-.263	-5.047	<.001					1.149
	CAS-1_CBS	.157	.036	.300	4.398	<.001					1.966
	CAS-1_MCB	.088	.030	.200	2.959	.003					1.924

Constant = PROCSI*

A hierarchical multiple regression analysis was conducted to examine the predictive effects of Machiavellianism (MACH) and Cognitive Attentional Syndrome subscales (CAS_CBS and CAS_MCB) on partner-related obsessive-compulsive symptoms (PROCSI).

Model 1: Machiavellianism (MACH) was entered as the sole predictor. The model was statistically significant, $F(1, 269) = 60.720$, $p < .001$, explaining 18.4% of the variance in PROCSI ($R^2 = .184$, Adjusted $R^2 = .184$). MACH showed a significant negative association with PROCSI ($\beta = -.429$, $t = -7.792$, $p < .001$), indicating that higher Machiavellian traits predict lower obsessive-compulsive symptoms related to romantic partners.

Model 2: Cognitive Attentional Syndrome subscales, CAS_CBS (Cognitive Behavioral Strategies) and CAS_MCB (Metacognitive Beliefs), were added as predictors alongside MACH. This model significantly improved prediction of PROCSI, $F(3, 267) = 51.975$, $p < .001$, explaining 36.9% of the variance ($R^2 = .369$, Adjusted $R^2 = .184$). The addition of CAS subscales led to a significant increase in explained variance ($\Delta R^2 = .184$, F change = 39.020, $p < .001$).

In this full model, Machiavellianism remained a significant negative predictor of PROCSI ($\beta = -.263$, $t = -5.047$, $p < .001$), though its effect size decreased compared to Model 1. CAS_CBS ($\beta = .300$, $t = 4.398$, $p < .001$) and CAS_MCB ($\beta = .200$, $t = 2.959$, $p = .003$) were both significant positive predictors. Tolerance values ranged between 0.509 and 1.000, and variance inflation factor (VIF) values ranged from 1.000 to 1.966. Residuals showed a minimum of –1.281 and a maximum of 1.878, with mean residual approximately zero ($M = 0.000$, $SD = 0.706$). Standardized residuals were within ±3 standard deviations (min.–1.804, max. 2.646), supporting the assumptions of normality and homoscedasticity. Predicted PROCSI values ranged from 0.69 to 3.12 ($M = 1.88$, $SD = 0.54$).

4.8.3.3. Hierarchical Multiple Regression for CAS-1, MACH, ECR-R, and PROCSI

Table 24. Hierarchical multiple regression for CAS-1, MACH, ECR-R, and PROCSI

Model	Variable	B	SE	β	t	p	R^2	ΔR^2	f^2	VIF
1	**Constant***	.510	.109		4.671	<.001	.433	.429	≈.763	
	ECR_ANX	.117	.039	.206	3.028	.003				2.181
	ECR_AVD	.283	.039	.492	7.239	<.001				2.181
2	**Constant***	.947	.269		3.517	<.001	.440	.433	≈.023	
	ECR_ANX	.126	.039	.220	3.231	.001				2.213
	ECR_AVD	.243	.045	.422	5.386	<.001				2.921
	MACH	-.082	.046	-.101	-1.776	.077				1.547
3	**Constant***	.818	.280		2.925	.004	.448	.438	≈.025	
	ECR_ANX	.070	.048	.122	1.463	.145				3.352
	ECR_AVD	.222	.046	.385	4.801	<.001				3.091
	MACH	-.082	.046	-.101	-1.788	.075				1.547
	CAS_CBS	.054	.038	.104	1.432	.153				2.549
	CAS_MCB	.030	.031	.067	.956	.340				2.383

Constant = PROCSI*

A three-step hierarchical multiple regression analysis was conducted to examine the predictive effects of anxious attachment (ECR_ANX), avoidant attachment (ECR_AVD), Machiavellianism (MACH), and Cognitive Attentional Syndrome subscales (CAS_MCB and CAS_CBS) on partner-related obsessive-compulsive symptoms (PROCSI).

Step 1: The model included an anxious attachment (ECR_ANX) and avoidant attachment (ECR_AVD) as predictors. This model significantly predicted PROCSI scores, $F(2, 268) = 102.328$, $p < .001$, explaining 43.3% of the variance in PROCSI ($R^2 = .433$, Adjusted $R^2 = .429$). Both anxious attachment ($\beta = .206$, $p = .003$) and avoidant attachment ($\beta = .492$, $p < .001$) had significant positive effects on PROCSI, with avoidant attachment showing a stronger contribution. This indicates that higher levels of attachment anxiety

and avoidance are associated with greater partner-related obsessive-compulsive symptoms.

Step 2: Machiavellianism (MACH) was added to the model. The addition of MACH led to a small, non-significant increase in explained variance ($\Delta R^2 = .007$), with the overall model still significant, $F(3, 267) = 69.818$, $p < .001$. In this step, anxious ($\beta = .220$, $p = .001$) and avoidant attachment ($\beta = .422$, $p < .001$) remained significant predictors. Machiavellianism showed a negative, but non-significant effect ($\beta = -.101$, $p = .077$) on PROCSI, suggesting a trend where higher Machiavellian traits might relate to lower obsessive-compulsive symptoms toward partners, but this did not reach conventional significance levels.

Step 3: Cognitive Attentional Syndrome subscales, CAS_CBS and CAS_MCB, were included as additional predictors. The model explained 44.8% of the variance in PROCSI ($R^2 = .448$, Adjusted $R^2 = .438$), but the increase in variance explained was again small and non-significant ($\Delta R^2 = .009$, F change = 2.133, $p = .120$). In this final model, avoidant attachment remained a significant positive predictor ($\beta = .385$, $p < .001$), while anxious attachment ($\beta = .122$, $p = .145$), Machiavellianism ($\beta = -.101$, $p = .075$), CAS_CBS ($\beta = .104$, $p = .153$), and CAS_MCB ($\beta = .067$, $p = .340$) did not significantly predict PROCSI scores. Although the full model was significant, the added variance explained by CAS components was minimal and non-significant ($\Delta R^2 = .009$, $p = .120$).

Tolerance and variance inflation factor (VIF) values indicate acceptable levels of multicollinearity for all predictors.

4.8.3.4. Hierarchical Multiple Regression for CAS-1, MACH, ECR-R, and ROCI

Table 25. Hierarchical multiple regression for CAS-1, MACH, ECR-R, and ROCI

Model	Variable	B	SE	β	t	p	R^2	ΔR^2	f^2	VIF
1	**Constant***	.308	.125		2.460	.015	.485	.481	≈.942	
	ECR_ANX	.274	.044	.399	6.160	<.001				2.181
	ECR_AVD	.242	.045	.349	5.385	<.001				2.181
2	**Constant***	.916	.308		2.970	.003	.494	.488	≈.018	
	ECR_ANX	.285	.044	.415	6.414	<.001				2.213
	ECR_AVD	.186	.052	.268	3.600	<.001				2.921
	MACH	-.113	.053	-.117	-2.154	.032				1.547
3	**Constant***	.693	.319		2.171	.031	.505	.496	≈.022	
	ECR_ANX	.215	.054	.313	3.955	<.001				3.352
	ECR_AVD	.170	.053	.245	3.225	.001				3.091
	MACH	-.112	.052	-.115	-2.143	.033				1.547
	CAS_CBS	.008	.043	.013	0.187	.852				2.549
	CAS_MCB	.082	.036	.153	2.290	.023				2.383

Constant = ROCI*

A three-step hierarchical multiple regression analysis was conducted to examine the predictive effects of anxious attachment (ECR_ANX), avoidant attachment (ECR_AVD), Machiavellianism (MACH), and Cognitive Attentional Syndrome subscales (CAS_MCB and CAS_CBS) on obsessive-compulsive symptoms related to romantic relationships (ROCI).

Step 1: The model included anxious attachment (ECR_ANX) and avoidant attachment (ECR_AVD) as predictors. This model significantly predicted ROCI scores, $F(2, 268) = 126.235$, $p < .001$, explaining 48.5% of the variance in ROCI ($R^2 = .485$, Adjusted $R^2 = .481$). Both anxious attachment ($\beta = .399$, $p < .001$) and avoidant attachment ($\beta = .349$, $p < .001$) had significant positive effects on ROCI, with anxious attachment showing a

slightly stronger contribution. This indicates that higher levels of attachment anxiety and avoidance are associated with increased obsessive-compulsive symptoms within romantic relationships.

Step 2: Machiavellianism (MACH) was added to the model. The addition of MACH resulted in a small but statistically significant increase in explained variance ($\Delta R^2 = .009$), with the overall model remaining significant, $F(3, 267) = 86.845$, $p < .001$. Anxious attachment ($\beta = .415$, $p < .001$) and avoidant attachment ($\beta = .268$, $p < .001$) remained significant positive predictors. Machiavellianism had a negative and statistically significant effect on ROCI ($\beta = –.117$, $p = .032$), suggesting that higher Machiavellian traits are associated with slightly lower obsessive-compulsive symptoms related to romantic relationships.

Step 3: Cognitive Attentional Syndrome subscales, CAS_MCB (Metacognitive Beliefs) and CAS_CBS (Cognitive Behavioral Strategies), were included as additional predictors. The final model explained 50.5% of the variance in ROCI ($R^2 = .505$, Adjusted $R^2 = .496$), with a further small but statistically significant increase in explained variance ($\Delta R^2 = .012$), F change = 3.087, $p = .047$. In this step, anxious attachment ($\beta = .313$, $p < .001$), avoidant attachment ($\beta = .245$, $p = .001$), Machiavellianism ($\beta = –.115$, $p = .033$), and CAS_MCB ($\beta = .153$, $p = .023$) were significant predictors. CAS_CBS ($\beta = .013$, $p = .852$) did not significantly predict ROCI scores.

Tolerance values ranged from 0.298 to 0.647, and variance inflation factor (VIF) values ranged from 1.547 to 3.352, indicating acceptable levels of multicollinearity among predictors and supporting the stability of regression coefficients. Residual statistics revealed predicted ROCI scores ranging from 0.72 to 4.02, with residuals symmetrically distributed around zero (mean = 0, SD = 0.75).

4.9. Mediating Effect Analysis

4.9.1. Mediating Effect Analysis for ECR_ANX → CAS_MCB → PROCSI

X: ECR_ANX, M: CAS_MCB, Y: PROCSI

Table 26. Mediating effect for ECR_ANX, CAS_MCB, and PROCSI

Step	Predictor → Outcome	B	SE	t	p	R	F (df)	95% CI for B
1	**ECR_ANX → CAS_MCB**	.931	.054	17.24	< .001	.524	297.11 (1.269)	
2	**ECR_ANX → PROCSI (total effect)**	.323			< .001			[.2383, .4077]
3	**ECR_ANX → PROCSI (direct effect)**	.256	.032	7.99	< .001	.334	67.43 (2.268)	[.1751, .3374]
	CAS_MCB → PROCSI	.072	.032	2.26	.024			
	ECR_ANX → CAS_MCB → PROCSI (Indirect Effect)	.067	.029					[.0106, .1276]

The mediation analysis using PROCESS Macro Model 4, Attachment Anxiety (ECR_ANX) was the independent variable (X), Cognitive Attentional Syndrome - Metacognitive Beliefs (CAS_MCB) was the mediator variable (M), and Partner Related Obsessive Compulsive Symptoms (PROCSI) was the dependent variable (Y).

In the first stage, the effect of the ECR_ANX variable on CAS_MCB was tested. According to the regression analysis, $R^2 = .524$, F (1,269) =297.11, $p < .001$, $B = .931$, $SE = .054$, $t = 17.24$, $p < .001$ results were obtained.

In the second stage, the effects of the ECR_ANX and CAS_MCB variables on PROCSI were examined. According to the examination results, ECR_ANX and CAS_MCB predicted PROCSI ($R^2 = .334$, F (2,268) = 67.43, $p < .001$). The ECR_ANX's direct effect ($B = .072$, $SE = .032$, $t = 2.26$, $p = .024$) and CAS_MCB' effect $B = .072$, $SE = 0.0321$, $t = 2.26$, $p = .024$ are found.

ECR_ANX → PROCSI direct effect (*B* = 0.2563, *p* < .001, 95%*CI* [.1751, .3374]), and indirect effect ECR_ANX → CAS_MCB → PROCSI (*B* = .067 *BootSE* = .029, 95%*CI* [.0106, .1276]) were found. Bootstrap sample number was taken as 5000 and the confidence level was taken as 95%.

4.9.2. Mediating Effect Analysis for ECR_ANX → CAS_CBS → PROCSI

X: ECR_ANX, M: CAS_CBS, Y: PROCSI

Table 27. Mediating effect for ECR_ANX, CAS_CBS, and PROCSI

Step	Predictor → Outcome	B	SE	t	p	R	F (df)	95% CI for B
1	**ECR_ANX → CAS_CBS**	.796	.045	17.49	< .001	.532	305.76 (1,269)	
2	**ECR_ANX → PROCSI (total effect)**	.323			< .001			[.2246, .4214]
3	**ECR_ANX → PROCSI (direct effect)**	.222	.041	5.42	< .001	.349	72.08 (2,268)	[.1417, .3034]
	CAS_CBS → PROCSI	.126	.037	3.37	.0008			
	ECR_ANX → CAS_CBS → PROCSI (Indirect Effect)	.101	.029					[.0416, .1570]

The mediation analysis using PROCESS Macro Model 4, Attachment Anxiety (ECR_ANX) was the independent variable (X), Cognitive Attentional Syndrome-Cognitive Behavioral Strategies (CAS_CBS) was the mediator variable (M), and Partner Related Obsessive Compulsive Symptoms (PROCSI) was the dependent variable (Y). In the first stage, the effect of the ECR_ANX variable on CAS_CBS was tested. According to the regression analysis, R^2 = .532, *F* (1,269) =305.76, *p* < .001, *B* = .796, *SE* = .045, *t* = 17.49, *p* < .001 results were obtained.

In the second stage, the effects of the ECR_ANX and CAS_CBS variables on PROCSI were examined. According to the examination results, ECR_ANX and CAS_CBS predicted PROCSI (R^2 = .349, *F* (2,268) = 72.08, *p* < .001). The ECR_ANX's direct effect

(*B* = .226, *SE* = .041, *t* = 5.42, *p* < .001), and CAS_CBS's effect (*B* = .126, *SE* = .037, *t* = 3.37, *p* = .0008) are found.

ECR_ANX → PROCSI direct effect (*B* = .222, *p* < .001, 95%*CI* [.1417, .3034]), and indirect effect ECR_ANX → CAS_CBS → PROCSI (*B* = .101, *BootSE* = .029, 95%*CI* [.0416, .1570]) were found. Bootstrap sample number was taken as 5000 and the confidence level was taken as 95%.

4.9.3. Mediating Effect Analysis for ECR_ANX → CAS_MCB → ROCI

X: ECR_ANX, CAS_MCB, Y: ROCI

Table 28. Mediating effect for ECR_ANX, CAS_MCB, and ROCI

Step	Predictor → Outcome	B	SE	t	p	R^2	F (df)	95% CI for B
1	**ECR_ANX → CAS_MCB**	2.635	.221	11.92	< .001	.524	297.10 (1,269)	
2	**ECR_ANX → ROCI (total effect)**	.450			< .001	.669	108.99 (2,268)	[.3430, .5574]
3	**ECR_ANX → ROCI (direct effect)**	.350	.045	7.74	< .001			[.2612, .4392]
	CAS_MCB → ROCI	.107	.035	3.05	.002			
	ECR_ANX → CAS_MCB → ROCI (Indirect Effect)	.100	.030					[.0407, .1615]

The mediation analysis using PROCESS Macro Model 4, Attachment Anxiety (ECR_ANX) was the independent variable (X), Cognitive Attentional Syndrome - Metacognitive Beliefs (CAS_MCB) was the mediator variable (M), and Relationship Obsessive Compulsive Symptoms (ROCI) was the dependent variable (Y).

In the first stage, the effect of the ECR_ANX variable on CAS_MCB was tested. According to the regression analysis, R^2 = .524, *F* (1,269) =297.10, *p* < .001, *B* = 2.635, *SE* = .221, *t* = 11.92, *p* < .001 results were obtained.

In the second stage, the effects of the ECR_ANX and CAS_MCB variables on ROCI were examined. According to the examination results, ECR_ANX and CAS_MCB predicted ROCI (R^2 = .669, F (2,268) = 108.99, p < .001). The ECR_ANX's direct effect (B = .350, SE = .045, t = 7.74, p < .001) and CAS_MCB' effect (B = .107, SE = .035, t = 3.05, p = .002) are found.

ECR_ANX → PROCSI direct effect (B = .350, p < .001, 95%CI [.2612, .4392]), and indirect effect ECR_ANX → CAS_MCB → ROCI (B = .1000, $BootSE$ = .0307, 95%CI [.0407, .1615]) were found. Bootstrap sample number was taken as 5000 and the confidence level was taken as 95%.

4.9.4. Mediating Effect Analysis for ECR_ANX → CAS_CBS → ROCI

X: ECR_ANX, M: CAS_CBS, Y: ROCI

Table 29. Mediating effect for ECR_ANX, CAS_CBS, and ROCI

Step	Predictor → Outcome	B	SE	t	p	R^2	F (df)	95% CI for B
1	**ECR_ANX → CAS_CBS**	.796	.045	17.48	< .001	.532	305.76 (1,269)	
2	**ECR_ANX → ROCI (total effect)**	.450			< .001	.439	105.06 (2,268)	[.3369, .5635]
3	**ECR_ANX → ROCI (direct effect)**	.376	.045	8.19	< .001			[.2861, .4670]
	CAS_CBS → ROCI	.092	.042	2.19	.028			
	ECR_ANX → CAS_CBS → ROCI (Indirect Effect)	.073	.035					[.0011, .1372]

The mediation analysis using PROCESS Macro Model 4, Attachment Anxiety (ECR_ANX) was the independent variable (X), Cognitive Attentional Syndrome-Cognitive Behavioral Strategies (CAS_CBS) was the mediator variable (M), and Relationship Obsessive Compulsive Symptoms (ROCI) was the dependent variable (Y).

In the first stage, the effect of the ECR_ANX variable on CAS_CBS was tested. According to the regression analysis, R^2 = .532, F (1,269) =305.76, p < .001, B = .796, SE = .045, t = 17.48, p < .001 results were obtained.

In the second stage, the effects of the ECR_ANX and CAS_CBS variables on ROCI were examined. According to the examination results, ECR_ANX and CAS_CBS predicted ROCI (R^2 = .439, F (2,268) = 105.06, p < .001). The ECR_ANX's direct effect (B = .376, SE = .045, t = 8.19, p < .001), and CAS_CBS's effect (B = .092, SE = .042, t = 2.19, p = .028) are found.

ECR_ANX → ROCI direct effect (B = .376, p < .001, 95%CI [.2861, .4670]), and indirect effect ECR_ANX → CAS_CBS → ROCI (B = .073, $BootSE$ = .035, 95%CI [.0011, .1372]) were found. Bootstrap sample number was taken as 5000 and the confidence level was taken as 95%.

4.9.5. Mediating Effect Analysis for MACH → CAS_MCB → PROCSI

X: MACH, M: CAS_MCB, Y: PROCSI

Table 30. Mediating effect for MACH, CAS_MCB, and PROCSI

Step	Predictor → Outcome	B	SE	t	p	R^2	F (df)	95% CI for B
1	**MACH → CAS_MCB**	-.572	.105	-5.43	< .001	.099	29.56 (1,269)	
2	**MACH → PROCSI (total effect)**	-.346			< .001			[-.4323, -.2602]
3	**MACH → PROCSI (direct effect)**	-.246	.042	-5.77	< .001	.323	63.91 (2,268)	[-.3308, -.1625]
	CAS_MCB → PROCSI	.174	.023	7.41	< .001			
	MACH → CAS_MCB → PROCSI (Indirect Effect)	-.099	.024					[-.1513, -.0557]

The mediation analysis using PROCESS Macro Model 4, MACH was the independent variable (X), Cognitive Attentional Syndrome-Metacognitive Beliefs (CAS_MCB) was

the mediator variable (M), and Partner Related Obsessive-Compulsive Symptoms (PROCSI) was the dependent variable (Y).

In the first stage, the effect of the MACH variable on CAS_MCB was tested. According to the regression analysis, R^2 = .099, *F* (1,269) =29.56, *p* < .001, *B* = -.572, *SE* = .105, *t* = -5.43, *p* < .001 results were obtained.

In the second stage, the effects of the MACH and CAS_MCB variables on PROCSI were examined. According to the examination results, MACH and CAS_MCB predicted PROCSI (R^2 = 32.30, *F* (2,268) = 63,91, *p* < .001). The MACH's direct effect (*B* = -.246, *SE* = .042, *t* = -5.77, *p* < .001), and CAS_MCB's effect (*B* = 0.1741, *SE* = .023, *t* = 7.41, *p* < .001) are found.

MACH → PROCSI direct effect (*B* = -.246, *p* < .001, 95%*CI* [-.3308, -.1625]), and indirect effect MACH → CAS_MCB → PROCSI (*B* = -.099, *BootSE* = .024, 95%*CI* [-.1513, -.0557]) were found. Bootstrap sample number was taken as 5000 and the confidence level was taken as 95%.

4.9.6. Mediating Effect Analysis for MACH → CAS_CBS → PROCSI

X: MACH, M: CAS_CBS, Y: PROCSI

Table 31. Mediating effect for MACH, CAS_CBS, and PROCSI

Step	Predictor → Outcome	B	SE	t	p	R^2	F (df)	95% CI for B
1	**MACH → CAS_CBS**	-.531	.088	-6.01	< .001	.118	36.14 (1,269)	
2	**MACH → PROCSI (total effect)**	-.366			< .001			[-.4698, -.2628]
3	**MACH → PROCSI (direct effect)**	-.226	.042	-5.34	< .001	.348	71.51 (2,268)	[-.3100, -.1431]
	CAS_CBS → PROCSI	.225	.027	8.20	< .001			
	MACH → CAS_CBS → PROCSI (Indirect Effect)	-.119	.031					[-.1891, -.0659]

The mediation analysis using PROCESS Macro Model 4, MACH was the independent variable (X), Cognitive Attentional Syndrome-Cognitive Behavioral Strategies (CAS_CBS) was the mediator variable (M), and Partner Related Obsessive Compulsive Symptoms (PROCSI) was the dependent variable (Y).

In the first stage, the effect of the MACH variable on CAS_CBS was tested. According to the regression analysis, R^2 = .118, *F* (1,269) =36.14, *p* < .001, *B* = -.531, *SE* = .088, *t* = -6,01, *p* < .001 results were obtained.

In the second stage, the effects of the MACH and CAS_CBS variables on PROCSI were examined. According to the examination results, MACH and CAS_CBS predicted PROCSI (R^2 = .348, *F* (2,268) = 71,51, *p* < .001). The MACH's direct effect (*B* = -.226, *SE* = .042, *t* = -5.34, *p* < .001), and CAS_CBS's effect (*B* = .225, *SE* = .027, *t* = 8.20, *p* < .001) are found.

MACH → PROCSI direct effect (*B* = -.226, *p* < .001, 95%*CI* [-0.3100, -0.1431]), and indirect effect MACH → CAS_CBS → PROCSI (*B* = -.119, *BootSE* = .031, 95%*CI* [-.1891, -.0659]) were found. Bootstrap sample size was taken as 5000, and the confidence level was taken as 95%.

4.9.7. Mediating Effect Analysis for MACH → CAS_MCB → ROCI

X: MACH, M: CAS_MCB, Y: ROCI

Table 32. Mediating effect for MACH, CAS_MCB, and ROCI

Step	Predictor → Outcome	B	SE	t	p	R^2	F (df)	95% CI for B
1	**MACH → CAS_MCB**	-.572	.105	-5.43	< .001	.099	29.56 (1,269)	
2	**MACH → ROCI (total effect)**	-.414			< .001			[-.5278, -.3002]
3	**MACH → ROCI (direct effect)**	-.265	.048	-5.45	< .001	.392	86.57 (2,268)	[-.3620, -.1699]
	CAS_MCB → ROCI	.258	.026	9.65	< .001			
	MACH → CAS_MCB → ROCI (Indirect Effect)	-.148	.031					[-.2117, -.0880]

The mediation analysis using PROCESS Macro Model 4, MACH was the independent variable (X), Cognitive Attentional Syndrome-Metacognitive Beliefs (CAS_MCB) was the mediator variable (M), and Relationship Obsessive Compulsive Symptoms (ROCI) was the dependent variable (Y).

In the first stage, the effect of the MACH variable on CAS_MCB was tested. According to the regression analysis, R^2 = .099, *F* (1,269) =29,56, *p* < .001, *B* = -.572, *SE* = .105, *t* = -5.43, *p* < .001 results were obtained.

In the second stage, the effects of the MACH and CAS_MCB variables on ROCI were examined. According to the examination results, MACH and CAS_MCB predicted ROCI (R^2 = .392, *F* (2,268) = 86,57, *p* < .001). The MACH's direct effect (*B* = -.265, *SE* = .048, *t* = -5.45, *p* < .001), and CAS_MCB's effect (*B* = .258, *SE* = .026, *t* = 9.65, *p* < .001) are found.

MACH → ROCI direct effect (*B* = -.265, *p* < .001, 95%*CI* [-.3620, -.1699]), and indirect effect MACH → CAS_MCB → ROCI (*B* = -.148, *BootSE* = .031, 95%*CI* [-.2117, -.088])

were found. Bootstrap sample number was taken as 5000 and the confidence level was taken as 95%.

4.9.8. Mediating Effect Analysis for MACH → CAS_CBS → ROCI

X: MACH, M: CAS_CBS, Y: ROCI

Table 33. Mediating effect for MACH, CAS_CBS, and ROCI

Step	Predictor → Outcome	B	SE	t	p	R^2	F (df)	95% CI for B
1	MACH → CAS_CBS	-.531	.088	-6.01	< .001	.118	76.35 (1,269)	
2	MACH → ROCI (total effect)	-.414			< .001			[-.5223, -.3057]
3	MACH → ROCI (direct effect)	-.262	.050	-5.19	< .001	.363	86.57 (2,268)	[-.3615, -.1627]
	CAS_CBS → ROCI	.285	.032	8.74	< .001			
	MACH → CAS_CBS → ROCI Indirect Effect	-.151	.034					[-.2244, -.0895]

The mediation analysis using PROCESS Macro Model 4, MACH was the independent variable (X), Cognitive Attentional Syndrome-Cognitive Behavioral Strategies (CAS_CBS) was the mediator variable (M), and Relationship Obsessive Compulsive Symptoms (ROCI) was the dependent variable (Y).

In the first stage, the effect of the MACH variable on CAS_CBS was tested. According to the regression analysis, R^2 = .118, *F* (1,269) =76,35, *p* < .001, *B* = -.531, *SE* = .088, *t* = -6.01, *p* < .001 results were obtained.

In the second stage, the effects of the MACH and CAS_CBS variables on ROCI were examined. According to the examination results, MACH and CAS_CBS predicted ROCI (R^2 = .363, *F* (2,268) = 86,57, *p* < .001). The MACH's direct effect (*B* = -.262, *SE* = .050,

t = -5.19, p < .001), and CAS_CBS's effect (B = .285, SE = .032, t = 8.74, p < .001) are found.

MACH → ROCI direct effect (B = -.262, p < .001, 95%CI [-.3615, -.1627]), and indirect effect MACH → CAS_CBS → ROCI (B = -.151, $BootSE$ = .034, 95%CI [-.2244, -.0895]) were found. Bootstrap sample number was taken as 5000 and the confidence level was taken as 95%.

5. DISCUSSION

The prominent purpose of this study is to examine the psychological manipulation and obsessive thought patterns that may occur in romantic relationships and to understand the cognitive processes underlying these dynamics. In the context of Cognitive Attentional Syndrome (CAS), it was investigated how the manipulative tendencies and obsessive attitudes toward partners in romantic relationships are related to the individual's cognitive attention patterns, such as rumination, attention to threats, and maladaptive coping strategies. In this context, the study aimed to evaluate the dysfunctional and emotional patterns of individuals in their romantic relationships from a metacognitive perspective and to reveal the cognitive infrastructure of psychological manipulation and obsessive attitudes towards the relationship and partner. The MACH IV scale was used to measure individuals' Machiavellian tendencies, the ROCI to assess obsessions regarding the relationship, the PROCSI for obsessions regarding the partner, and the Cognitive Attentional Syndrome-CAS scale for cognitive attention. At the same time, the Experiences in Close Relationship scale, which measures Anxious and Avoidant Attachment styles, was used to evaluate relationship processes within the scope of attachment. With the findings obtained from this research, it is expected to better understand these processes in romantic relationships within the cognitive mechanism and thus contribute to those suffering from theoretical and applied therapeutic interventions.

According to Machiavellians, others are naive people who can be easily manipulated (Monaghan et al., 2020). Their strategies include manipulating others for their benefit and making that manipulation acceptable to everyone (Monaghan et al., 2018). To understand whether Machiavellian tendencies change according to gender, gender comparisons were made. According to the findings, women show more Machiavellian tendencies compared to men. Assuming males utilize emotive manipulation strategies more than females (Anderson 2009). In traditional views, men are thought to be more emotionally distant and strategic. However, according to the findings, women can exhibit the same mindset and behaviors in their romantic relationships and social lives. Machiavellian women generally favor experiencing romantic relationships as sentimentally distant with descending dedication (Ali et al., 2010). Moreover, they may utilize their sexuality to accomplish their interests and material causes (Brewer & Abell, 2015). In the evaluation made to understand whether there is a relationship between

Machiavellian tendencies and the attachment styles of the person, a negative relationship was seen in both Avoidant and Anxious Attachment. In other words, individuals who show Machiavellian tendencies adopt less Avoidant and Anxious attachment styles in their romantic relationships. Desiring extreme intimacy with the partner and pursuing reassurance are aspects of anxious attachment (Mikulincer & Shaver, 2011). Therefore, to meet the emotional and physical expectations in romantic relationships, they display a demeanor to get intimate with their partners (Allison et al., 2008). Machiavellian behaviors are generally accepted as exhibiting emotional distance, control in relationships, and manipulative behaviors in line with their interests (Christie and Geis, 1970). According to the study conducted on the affinity intentions of Machiavellian people, a positive association was found between the choice for causal and a negative association with the intention for serious (Atkinson et al., 2016). When these are taken into consideration, behaviors such as anxiety and avoidance in relationships are opposite to this behavior pattern. Relationships are strategically evaluated and protected in line with interests, and emotional investments and gains are not priorities. People with Machiavellian tendencies prioritize the feeling of power and control over emotional needs such as attachment (Jonason et al., 2014).

Literature supports the idea that the relationship between Machiavellianism and being detached from one's own emotions (Christie & Geis, 1970; Wastell & Booth, 2003). When viewed in this sense, it contrasts with the rumination and constant threats examined by the Cognitive Attentional Syndrome and maladaptive coping strategies. Machiavellian people may not be able to focus on their internal attention because they act in a planned manner with strategic thinking and focus on power and control. Machiavellians have highly developed cognitive abilities supported by neural mechanisms that enable them to use their emotional responses appropriately and in a way that serves their goals to manipulate individuals to achieve their purposes (Bereczkei, 2018). Similarly, it is seen that these people do not have many constant mental preoccupations, i.e., obsessions regarding their relationships and partners. It can be evaluated because of their emotionally distant approach to relationships, acting in line with their interests, and adopting anxious and avoidant attachment styles. When we predict Machiavellian tendencies with Cognitive Attentional Syndrome and relationship and partner-focused obsessions, as mentioned before, the negative relationship between Machiavellian tendencies and

cognitive attention also affects these obsessions. In other words, while CAS is a strong positive predictor for partner and relationship-focused obsessions, Machiavellian tendencies reduce its effect. The findings obtained in this study revealed that Machiavellian tendencies are significantly negatively correlated with two basic components of cognitive attentional syndrome, namely cognitive-behavioral strategies (CAS_CBS) and metacognitive beliefs (CAS_MCB). This situation indicates that Machiavellian individuals may have a low tendency to overemphasize or control their internal thought processes. Machiavellianism is a personality trait characterized by manipulative social strategies, emotional coldness, and self-interested behaviors in interpersonal relationships (Christie & Geis, 1970). These individuals are guided more by logical and strategic processes, putting emotional information processing into the background. Neuroscientific studies show that limbic system structures such as the amygdala, which are involved in emotional processing, show lower activity in individuals with this personality structure, reducing social empathy (Abe et al., 2011). This low emotional sensitivity may also reduce the individual's perception of their internal thoughts as threats. Therefore, in Machiavellian individuals, the components of CAS, such as rumination, anxiety, or efforts to control threat, which are coping strategies with thoughts, are activated less. In this context, it can be assumed that regions associated with planning, inhibition, and cognitive control, such as the dorsolateral prefrontal cortex (dlPFC), are more dominant in these individuals. In addition, decreased activity in regions that process social-emotional information, such as the anterior insula and ventromedial prefrontal cortex (vmPFC), may prevent these individuals from engaging in emotion-based mental rumination. This results in experiencing low-level cognitive attentional syndrome (CAS). Thus, Machiavellian individuals develop more strategic and emotion-independent responses to relationship stressors (Miller & Cohen, 2001; Abe et al., 2011).

In romantic relationships, when women and men are compared in obsessions towards the relationship (ROCI) and the partner (PROCSI), it is found that women show higher obsessive tendencies towards their romantic relationships. It is observed that women exhibit more behaviors such as constantly checking and thinking about the correctness of their relationships, their love for their partners, and whether they are loved by their partners. This may be related to women developing behaviors such as observing and checking their partners to maintain their relationships (Dainton, 2000, p. 155). However,

no distinctive difference was found between the sexes in obsessions with the partner. When it comes to the relationship between gender and romantic relationships, obsessions are generally evaluated, but studies show that men do not exhibit this behaviorally (Marazziti et al., 2008; Aron et al., 2005; Baumeister and Vohs, 2004).

When Cognitive Attentional Syndrome (Cognitive Behavioral Strategies & Metacognitive Beliefs) is examined within the scope of partner (PROCSI) and relationship (ROCI) obsession, it is seen that there is a positive medium-level relationship between all these processes. Cognitive Attentional Syndrome is defined as rumination, focused attention on constant threats (Wells, 2009). This relationship feeds on each other with obsessive thoughts. As CAS symptoms increase, obsessions towards the partner and the relationship increase, and vice versa. As individuals think about their relationships, their partners, their commitment to their partners, their partners' external opinions, and their moral levels, their attentional focus turns to these. As their attentional focus turns, their obsessions and ruminative thoughts increase. This process continues as a dead-end cycle. This excessive focus on cognitive attention causes the symptoms to continue (Fairbrother and Woody, 2008). When examined neurocognitively, CAS symptoms are disruptions in executive functions in the prefrontal cortex and damage the focus control mechanism (Metzler-Baddeley et al., 2006).

When these are considered, obsessions and other CAS symptoms are exacerbated. When romantic relationships and partner obsessions and attachment styles (Anxious & Avoidant Attachments) are examined, there is a strong relationship between these obsessions and attachment types. It is seen that individuals who show avoidant behaviors, especially in romantic relationships, are more obsessive towards their partners. This situation makes some symptomatic behaviors like thinking too much about the partner with whom closeness cannot be established, criticizing too much, and judging the appearance more apparent (Mikulincer and Shave 2016). Avoidantly attached individuals act more individually and are distant towards their partners (Bowlby, 1988), and this may feed obsessions with the concern of losing trust and control towards the partner. On the other hand, anxiously attached individuals experience anxiety about losing both their partners and their relationships, and this can be seen as feeding obsessions by constantly thinking about their relationships and partners and constantly preoccupying their minds

with them (Feeney et al., 1994). Anxious and Avoidant attachment triggers obsessive thoughts about people's relationships and partners.

Romantic relationship obsessions (ROCI) and Partner-related obsessions (PROCSI), and Cognitive Attentional Syndrome (CAS) (Cognitive Behavioral Strategies & Metacognitive Beliefs), CAS strongly predicts romantic relationship and partner obsession both in terms of metacognitive belief and cognitive behavioral strategies. Based on this, obsessions are not just symptoms but also affect the person at a cognitive level. When examined particularly in terms of metacognitive beliefs, beliefs such as I cannot control my thoughts and focusing on a possible threat can keep me safe (Wells, 2009) may play a crucial role in the continuity and exacerbation of obsessions. Similarly, individuals with high relationship obsession have high relational value within the scope of Cognitive Behavioral Strategies, indicating that the individual is implementing incorrect coping strategies (Fisher and Wells, 2008). As individuals' ROCI and PROCSI symptoms intensify, their tendency towards incorrect coping strategies and metacognitive beliefs also intensifies.

When attachment anxiety, CAS (Cognitive Behavioral Strategies & Metacognitive Beliefs), and partner-related (PROCSI) and romantic relationship-focused (ROCI) obsessions were examined, it was seen that attachment anxiety increased CAS symptoms and partner-focused obsessions. Attachment anxiety plays a central role in obsessions towards the partner. Individuals' belief systems and coping strategies are crucial in the formation and maintenance of obsessive-compulsive symptoms (Wells, 2009). Being anxiously attached can also have negative metacognitive thoughts toward relationships and the partner and can activate obsessions via CAS (see Fisher and Wells, 2008; Mikulincer & Shaver, 2016). CAS symptoms can strengthen obsessions towards the relationship, both directly and through mediation.

The mediation models tested in the study showed that the level of attachment anxiety increases obsessive-compulsive symptoms related to the partner and relationship is mediated by the components of the cognitive attentional syndrome. It is known that individuals with an anxious attachment style experience a constant fear of abandonment or being unloved in their relationships (Mikulincer & Shaver, 2007). This anxiety causes

the individual to constantly question their mental representations of their partner and to repeat these questions in a ruminative manner. This situation is directly supported by the cognitive-behavioral strategy component of the CAS: behaviors such as frequent thinking, checking social media, searching for messages, and avoiding threatening thoughts maintain the individual's obsessions (Wells, 2009). These processes also have a neural basis. The amygdala becomes more reactive in individuals with high attachment anxiety, which leads to a greater perception of threat (Gillath, Bunge, Shaver, Wendelken, & Mikulincer, 2005). At the same time, the ventral tegmental area (VTA) participates in attachment and reward processes via dopamine, which may support the tendency to overanalyze the partner's behavior (Bartels & Zeki, 2004). If the prefrontal cortex does not have sufficient regulatory function, these emotional loadings are transferred to the behavioral level without frontal control. In addition, empathic and social cognitive structures such as the posterior insula and the temporal parietal junction (TPJ) may accompany these processes (Decety & Jackson, 2004). In this sense, the effect of attachment anxiety on PROCSI via CAS can be explained at both the psychological and neurobiological level.

Obsessive-compulsive symptoms in romantic relationships do not only stem from interpersonal insecurity or attachment history; they are also closely related to how the individual structures their thoughts and copes with these thoughts, and the extent to which they perceive them as threats. At this point, regulating metacognitive processes should be considered a critical intervention target for the psychological health of individuals in romantic relationships. From a neuroscientific perspective, the fact that these processes are connected to brain regions related to emotional regulation, thought inhibition, and internal mental representations requires intervention programs to be effective at both psychological and neurophysiological levels (Ochsner & Gross, 2005; Etkin, Büchel, & Gross, 2015). In this context, metacognitive therapy (MCT) has a strong potential to reduce both CAS symptoms and romantic obsessions (Wells, 2009; Fisher & Wells, 2008). In addition, if the individual has low Machiavellian tendencies and poor emotional regulation skills, mindfulness-based neurocognitive therapies (e.g., mindfulness, attention training) aimed at reducing CAS may also be effective (Hölzel et al., 2011; Tang, Hölzel, & Posner, 2015).

The study shows that cognitive attentional syndrome significantly predicts romantic relationship obsessions (ROCI) with both cognitive-behavioral strategies (CBS) and metacognitive beliefs (MCB) components. This result supports the metacognitive model proposed by Wells (2009). According to this model, individuals worry about certain thoughts not only in terms of their content but also about what these thoughts mean about them. For example, the thought "my partner may be cheating on me" not only poses a threat to the individual in terms of content but also triggers metacognitive beliefs such as "this thought keeps coming out of my head, so it must be true." Beliefs related to such thoughts increase efforts to cope with ruminative and compulsive behaviors (Wells, 2009; Fisher & Wells, 2008). In particular, the brain network known as the default mode network (DMN)—comprised of structures such as the medial prefrontal cortex (mPFC), posterior cingulate cortex (PCC), angular gyrus, and precuneus—is associated with spontaneous thinking, mind wandering, and rumination (Raichle, 2015). Increased CAS is associated with hyperactivity in this network. Furthermore, obsessive thought content is associated with hypersensitivity in error-signaling regions such as the orbitofrontal cortex (OFC) and anterior cingulate cortex (ACC) (Fitzgerald, Stern, Angstadt, et al., 2005). These brain regions cause the individual to experience an intense sense that something is wrong, which contributes to the maintenance of romantic obsessive symptoms. In conclusion, both components of the CAS have a critical role in explaining obsessive-compulsive symptoms in romantic relationships at both cognitive and neurobiological levels (Wells, 2009; Raichle, 2015; Fitzgerald et al., 2005).

This study aimed to reveal how psychological manipulation and obsessive thought patterns are intertwined with cognitive processes in romantic relationships. The findings showed that Machiavellian tendencies were significantly negatively correlated with cognitive-behavioral strategies and metacognitive beliefs, which are the basic components of cognitive attention syndrome (CAS). This situation reveals that individuals with manipulative and strategic thinking structures have lower tendencies to over-control or over-focus on their internal thoughts. The neuroscientific perspective of the study supports the different activation patterns in cognitive control and planning. processes of the prefrontal cortex and the social-emotional processing functions of the limbic system in Machiavellian individuals. This shows that obsessive symptoms in romantic relationships are not only due to relationship dynamics but also to the

functioning of the individual's thought structure and metacognitive regulations. While women were observed to have higher obsessive tendencies towards romantic relationships compared to men, no significant difference was found between the genders in partner-focused obsessions. This finding is consistent with the literature on the role of gender in obsessive thought content and orientation. In addition, attachment styles (anxious and avoidant) were found to be strongly associated with both CAS and relationship- and partner-focused obsessive symptoms. In this context, it was revealed that attachment anxiety plays a critical role in the emergence of obsessive-compulsive symptoms through CAS components. These results emphasize that obsession and manipulation in romantic relationships are multilayered and closely linked to cognitive functioning, and therefore, interventions should target not only the symptoms but also the underlying cognitive and metacognitive processes. Metacognitive therapy and neurocognitive interventions stand out as effective strategies in this area, especially for reducing CAS symptoms.

6. CONCLUSION AND RECOMMENDATIONS

This study aimed to examine the cognitive and behavioral basis of psychological manipulation and obsessive behaviors seen in romantic relationships; in particular, it aimed to reveal the mediating role of Cognitive Attentional Syndrome (CAS). In this study, structured within the framework of current transdiagnostic cognitive models, it was assumed that dysfunctional metacognitive processes, namely CAS, function as a psychological bridge between Machiavellian tendencies and partner-focused obsessive and controlling behaviors.

Regression and mediation effect analyses conducted on a non-clinical sample of 271 people yielded remarkable findings. First, Machiavellianism, measured with the MACH-IV scale, was a negatively significant predictor of CAS. This situation shows that individuals with manipulative personality traits resort more to maladaptive cognitive strategies such as worry, rumination, and threat monitoring. This result is consistent with previous findings in the literature that manipulative individual's resort to repetitive thought processes to gain control over their social environments (Jones & Paulhus, 2014; Wells, 2009).

Secondly, the level of CAS showed a significant positive relationship with both partner-focused obsessive symptoms (PROCSI) and relational obsessive control behaviors (ROCI). This finding shows that the basic components of CAS, metacognitive beliefs, attentional biases, and repetitive negative thinking styles, can increase the individual's level of obsession and control behaviors in romantic relationships. CAS was found to partially mediate the relationship between Machiavellianism and relational obsessive control; this situation shows that metacognitive disorders may be a basic mechanism that transforms personality traits into relational dysfunctions.

Hierarchical regression analyses showed that Machiavellianism and partner-focused obsessions (PROCSI) significantly predicted relational obsessive control behaviors (ROCI) and that a significant increase in the explained variance was achieved by adding the CAS variable to the model. This result reveals the unique and additive effect of cognitive and metacognitive mechanisms on relational behaviors.

In the mediation effect analysis conducted using the PROCESS macro, it was observed that the indirect effect between Machiavellianism and ROCI was statistically significant. This result shows that individuals with manipulative traits may not exhibit

direct control behaviors but rather perform this indirectly through maladaptive cognitive processes such as CAS.

The research results offer important implications in theoretical and applied terms. From a theoretical perspective, the findings support the validity of transdiagnostic cognitive models in explaining dysfunctional behaviors observed in romantic relationships; metacognitive processes (Wells, 2000; Wells & Matthews, 1994) play a central role in the emergence of psychological manipulation and obsessive relational behaviors.

Also, the results of the study revealed that attachment styles have significant relationships, especially with Cognitive Attentional Syndrome (CAS), and controlling behaviors in romantic relationships (ROCI). Attachment anxiety, one of the ECR sub-dimensions, feeds CAS symptoms by increasing the level of mental preoccupation characterized by symptoms such as excessive thinking, fear of rejection, and intense approval-seeking in individuals' relationships. This, in turn, paves the way for individuals to exhibit more obsessive and controlling behaviors in relationships.

On the other hand, attachment avoidance causes individuals to display a different metacognitive functioning towards their internal experiences with tendencies to avoid emotional closeness, give excessive importance to autonomy, and keep emotional distance. The research findings showed that both anxious and avoidant attachment styles affect individuals' cognitive and behavioral regulation strategies in romantic relationships and indirectly contribute to manipulative and controlling relationship patterns through CAS. This situation reveals that attachment styles play a determining role not only in emotional but also in cognitive attentional processes.

In practical cases, the determinations suggest noteworthy marks for therapeutic intervention. Especially interventions targeting metacognitive beliefs, such as Metacognitive Therapy (MCT), may be sufficient to lessen obsessive and manipulative behaviors. Such therapeutic approaches may significantly contribute to boosting and maintaining relationship quality and preventing psychological detriment between partners.

However, there are some limitations to the study. The cross-sectional design of the study is restrictive in drawing causal conclusions. Therefore, it is recommended that future studies use longitudinal or experimental designs to reveal the temporal and causal

aspects of relational variables. In addition, the fact that the measurement tools used are based on self-reporting may cause social desirability bias. The use of behavioral or third-party observation-based methods in future studies will increase the validity of the findings.

In conclusion, this study has comprehensively revealed the cognitive-metacognitive mechanisms underlying the formation of psychological manipulation and obsessive behaviors in romantic relationships, providing empirical support that Cognitive Attentional Syndrome plays a central role in transforming Machiavellian tendencies into relational control behaviors. These findings contribute significantly to theoretical literature and highlight new avenues for clinical intervention. The results emphasize that obsessive-compulsive symptoms in romantic relationships should be addressed not only at the behavioral level but also at the cognitive and metacognitive levels, underscoring the importance of developing individualized intervention models in clinical practice. Furthermore, it is recommended that future research examine the neurobiological foundations of these cognitive processes in greater detail, evaluate their applicability across diverse cultural contexts, and incorporate long-term, controlled studies to enhance the effectiveness of therapeutic approaches. Overall, this study advances the understanding of the cognitive infrastructure of psychological manipulation and obsessive thoughts in romantic relationships, offering valuable insights for both theoretical frameworks and applied clinical settings.

REFERENCES

Abe, N., Suzuki, M., Mori, E., Itoh, M., & Fujii, T. (2011). Neural correlates of true memory, false memory, and deception. *Cerebral Cortex, 21*(2), 484–493.

Acevedo, B. P., Aron, A., Fisher, H. E., & Brown, L. L. (2012). Neural correlates of long-term intense romantic love. Social Cognitive and Affective Neuroscience, 7(2), 145–159. https://doi.org/10.1093/scan/nsq092

Akdeniz, B., & Cıhan, H. (2023). Gaslighting and interpersonal relationships: Systematic review. Psikiyatride Güncel Yaklaşımlar, 16(1), 146–158.

Ali, F., & Chamorro-Premuzic, T. (2010). The dark side of love and life satisfaction: Associations with intimate relationships, psychopathy and Machiavellianism. Personality and Individual Differences, 48(2), 228–233. https://doi.org/10.1016/j.paid.2009.10.016

Aron, A., Fisher, H., Mashek, D. J., Strong, G., Li, H., & Brown, L. L. (2005). Reward, motivation, and emotion systems associated with early-stage intense romantic love. Journal of Neurophysiology, 94(1), 327–337. https://doi.org/10.1152/jn.00838.2004

Attridge, M. (2013). Jealousy and relationship closeness: Exploring the good (reactive) and bad (suspicious) sides of romantic jealousy. SAGE Open, 3(1), 2158244013476054. https://doi.org/10.1177/2158244013476054

Aydın, A., & Aydın, N. (2018). Bilişsel Dikkat Sendromu Ölçeği'nin Türkçeye uyarlanması: Geçerlik ve güvenirlik çalışması. Anadolu Psikiyatri Dergisi, 19(3), 314–322.

Barut, M. (1996). Makyavelizmin toplumsal temelleri (Yüksek lisans tezi). Mersin Üniversitesi, Sosyal Bilimler Enstitüsü.

Bartels, A., & Zeki, S. (2004). The neural correlates of maternal and romantic love. *NeuroImage, 21*(3), 1155–1166. https://doi.org/10.1016/j.neuroimage.2003.11.003

Baumeister, R. F., & Vohs, K. D. (Eds.). (2004). Handbook of self-regulation: Research, theory, and applications. Guilford Press.

Bowlby, J. (1988). A secure base: Parent-child attachment and healthy human development. Basic Books.

Brewer, G., & Abell, L. (2017). Machiavellianism and romantic relationship dissolution. Personality and Individual Differences, 106, 226–230.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), Attachment theory and close relationships (pp. 46–76). Guilford Press.

Bruin, W., Denys, D., & van Wingen, G. (2019). Diagnostic neuroimaging markers of obsessive-compulsive disorder: Initial evidence from structural and functional MRI studies. Progress in Neuro-Psychopharmacology and Biological Psychiatry, 91, 49–59.

Cerea, S., Ghisi, M., Bottesi, G., Carraro, E., Broggio, D., & Doron, G. (2020). Reaching reliable change using short, daily, cognitive training exercises delivered on a mobile application: The case of Relationship Obsessive Compulsive Disorder (ROCD) Symptoms and cognitions in a subclinical cohort. Journal of Affective Disorders, 276, 775–787.

Chin, K., Atkinson, B. E., Raheb, H., Harris, E., & Vernon, P. A. (2017). The dark side of romantic jealousy. Personality and Individual Differences, 115, 23–29.

Christie, R., & Geis, F. L. (1970). Studies in Machiavellianism. Academic Press.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.

De Boer, A., van Buel, E. M., & Ter Horst, G. J. (2012). Love is more than just a kiss: A neurobiological perspective on love and affection. Neuroscience, 201, 114–124.

Decety, J., & Jackson, P. L. (2004). The functional architecture of human empathy. *Behavioral and*

Cognitive Neuroscience Reviews, 3(2), 71–100. https://doi.org/10.1177/1534582304267187

Doron, G., & Szepsenwol, O. (2015). Partner-focused obsessions and self-esteem: An experimental investigation. Journal of Behavior Therapy and Experimental Psychiatry, 49, 173–179.

Doron, G., Derby, D. S., Szepsenwol, O., & Talmor, D. (2012). Flaws and all: Exploring partner-focused obsessive-compulsive symptoms. Journal of Obsessive-Compulsive and Related Disorders, 1(4), 234–243.

Doron, G., Szepsenwol, O., & Moulding, R. (2012). Relationship obsessive compulsive disorder (ROCD): A conceptual framework. Journal of Obsessive-Compulsive and Related Disorders, 1(4), 243–254.

Doron, G., Derby, D., Szepsenwol, O., & Talmor, D. (2012). Tainted love: Exploring relationship-centered obsessive compulsive symptoms in two non-clinical cohorts. Journal of Obsessive-Compulsive and Related Disorders, 1(1), 16–24. https://doi.org/10.1016/j.jocrd.2011.11.002

Del Giudice, M. (2011). Sex differences in romantic attachment: A meta-analysis. Personality and Social Psychology Bulletin, 37(2), 193–214. https://doi.org/10.1177/0146167210392789

Engeler, D., & Yargıç, İ. (2001). Machiavellianizm Ölçeği'nin (MACH-IV) Türkçe'ye uyarlanması: Geçerlik ve güvenirlik çalışması. Türk Psikoloji Dergisi, 16(47), 45–54.

Etkin, A., Büchel, C., & Gross, J. J. (2015). The neural bases of emotion regulation. *Nature Reviews Neuroscience, 16*(11), 693–700. https://doi.org/10.1038/nrn4044

Esen, A., & Doğan, T. (2017). Türkçe bilişsel dikkat sendromu ölçeği (CAS-1) geçerlilik ve güvenirlik çalışması. Türk Psikoloji Yazıları, 20(39), 67–82.

Fatima, S., & Shahid, Z. (2020). Conditional indirect relations between executive functions, emotion regulation, and Machiavellianism in young men and women. Personality and Individual Differences, 165, 110140.

Fairbrother, N., & Woody, S. R. (2008). Measuring partner-focused obsessions in obsessive-compulsive disorder. Journal of Anxiety Disorders, 22(6), 1024–1033.

Feeney, J. A., Noller, P., & Hanrahan, M. (1994). Assessing adult attachment. In J. A. Feeney & R. N. Thrush (Eds.), Attachment and adult relationships (pp. 128–152). Guilford Press.

Fergus, T. A., Bardeen, J. R., & Orcutt, H. K. (2012). Attentional control moderates the relationship between activation of the cognitive attentional syndrome and symptoms of psychopathology. Personality and Individual Differences, 53(3), 213–217.

Fernandez, S., Sevil, C., & Moulding, R. (2021). Feared self and dimensions of obsessive compulsive symptoms: Sexual orientation-obsessions, relationship obsessions, and general OCD symptoms. Journal of Obsessive-Compulsive and Related Disorders, 28, 100608.

Field, A. (2018). Discovering statistics using IBM SPSS Statistics (5th ed.). Sage Publications.

Fisher, H. E., Aron, A., Mashek, D., Li, H., & Brown, L. L. (2002). Defining the brain systems of lust, romantic attraction, and attachment. Archives of Sexual Behavior, 31, 413–419.

Fisher, P., & Wells, A. (2008). Metacognitive therapy for obsessive–compulsive disorder: A case series. Journal of Behavior Therapy and Experimental Psychiatry, 39(2), 117–132. https://doi.org/10.1016/j.jbtep.2006.12.001

Fitzgerald, K. D., Stern, E. R., Angstadt, M., et al. (2005). Error-related hyperactivity of the anterior cingulate cortex in obsessive-compulsive disorder. *Biological Psychiatry, 57*(3), 287–294.

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). An item-response theory analysis of self-report measures of adult attachment. Journal of Personality and Social Psychology, 78(2), 350–365. https://doi.org/10.1037/0022-3514.78.2.350

George, D., & Mallery, P. (2010). SPSS for Windows Step by Step: A Simple Guide and Reference (10th ed.). Boston: Pearson.

Ghasemi, A., & Zahediasl, S. (2012). Normality tests for statistical analysis: A guide for non-statisticians. International Journal of Endocrinology and Metabolism, 10(2), 486–489. https://doi.org/10.5812/ijem.3505

Giuri, S., Caselli, G., Manfredi, C., Rebecchi, D., Granata, A., Ruggiero, G. M., & Veronese, G. (2017). Cognitive attentional syndrome and metacognitive beliefs in male sexual dysfunction: An exploratory study. American Journal of Men's Health, 11(3), 592–599.

Gillath, O., Bunge, S. A., Shaver, P. R., Wendelken, C., & Mikulincer, M. (2005). Attachment-style differences in the ability to suppress negative thoughts: Exploring the neural correlates. *NeuroImage, 28*(4), 835–847.

Grieve, R., & Panebianco, L. (2013). Assessing the role of aggression, empathy, and self-serving cognitive distortions in trait emotional manipulation. Australian Journal of Psychology, 65(2), 79–88.

Hatfield, E. C., Pillemer, J. T., O'Brien, M. U., & Le, Y. C. L. (2008). The endurance of love: Passionate and companionate love in newlywed and long-term marriages. Interpersona: An International Journal on Personal Relationships, 2(1), 35–64.

Hezel, D. M., & McNally, R. J. (2016). A theoretical review of cognitive biases and deficits in obsessive–compulsive disorder. Biological Psychology, 121, 221–232.

Honari, B., & Saremi, A. A. (2015). The study of relationship between attachment styles and obsessive love style. Procedia-Social and Behavioral Sciences, 165, 152–159.

Hölzel, B. K., Lazar, S. W., Gard, T., Schuman-Olivier, Z., Vago, D. R., & Ott, U. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. *Perspectives on Psychological Science, 6*(6), 537–559. https://doi.org/10.1177/1745691611419671

İnözü, M., & Tirak, B. (2015). Obsesif kompulsif belirtiler bağlamında ilişkisel obsesif kompulsif belirtiler:

ROCI ve PROCSI'nin Türkçeye uyarlanması, psikometrik özelliklerinin incelenmesi. Türk Psikiyatri Dergisi, 26(2), 110–119.

İnözü, M., & Tıraak, E. (2015). A new obsessive-compulsive symptom type: The psychometric properties of the Turkish forms of Relationship Obsessive-Compulsive Inventory and Partner-Related Obsessive-Compulsive Symptoms Inventory. Klinik Psikiyatri Dergisi.

Jaeger, T., Moulding, R., Yang, Y. H., David, J., Knight, T., & Norberg, M. M. (2021). A systematic review of obsessive-compulsive disorder and self: Self-esteem, feared self, self-ambivalence, egodystonicity, early maladaptive schemas, and self-concealment. Journal of Obsessive-Compulsive and Related Disorders, 31, 100665.

Jarwan, A. S., Al Frehat, B. M., Faisal, A., & Hawari, F. M. A. Emotional manipulation and its relationship with symptoms of narcissistic personality disorder among couples.

Jonason, P. K., & Webster, G. D. (2010). The Dirty Dozen: A concise measure of the Dark Triad. Psychological Assessment, 22(2), 420–432. https://doi.org/10.1037/a0019265

Jones, D. N., & Paulhus, D. L. (2009). Machiavellianism. In M. R. Leary & R. H. Hoyle (Eds.), Handbook of individual differences in social behavior (pp. 93–108). Guilford Press.

Karakurt, G., & Silver, K. E. (2013). Emotional abuse in intimate relationships: The role of gender and age. Violence and Victims, 28(5), 804–821.

Khanghah, H. B., & Samkhaniani, E. (2024). Comparison of Cognitive Behavioral Therapy and Mindfulness-Based Therapy on Relational Obsessive-Compulsive Disorder and Fear of Intimacy in Female Students. Journal of Adolescent and Youth Psychological Studies (JAYPS), 5(6), 12–21.

Kılıç, N., & Altınok, A. (2021). Obsession and relationship satisfaction through the lens of jealousy and rumination. Personality and Individual Differences, 179, 110959.

Knox, L., Karantzas, G., & Ferguson, E. (2024). The role of attachment, insecurity, and stress in partner maltreatment: A meta-analysis. Trauma, Violence, & Abuse, 25(1), 721–737.

Kowalski, J., Wypych, M., Marchewka, A., & Dragan, M. (2019). Neural correlates of cognitive-attentional syndrome: An fMRI study on repetitive negative thinking induction and resting state functional connectivity. Frontiers in Psychology, 10, 648.

Kowalski, J., & Dragan, M. (2019). Cognitive-attentional syndrome - The psychometric properties of the CAS-1 and multi-measure CAS-based clinical diagnosis. Comprehensive Psychiatry, 91, 13–21.

Littman, R., Leibovits, G., Halfon, C. N., Schonbach, M., & Doron, G. (2023). Interpersonal transmission of ROCD symptoms and susceptibility to infidelity in romantic relationships. Journal of Obsessive-Compulsive and Related Disorders, 37, 100802.

Mansueto, G., Marino, C., Palmieri, S., Offredi, A., Sarracino, D., Sassaroli, S., & Caselli, G. (2022). Difficulties in emotion regulation: The role of repetitive negative thinking and metacognitive beliefs. *Journal of Affective Disorders, 308*, 473–483.

March, E., Kay, C. S., Dinić, B. M., Wagstaff, D. L., & Dinić, M. (2023). "It's all in your head": Personality traits and gaslighting tactics in intimate relationships. *Journal of Family Violence, 38*(5), 567–578. https://doi.org/10.1007/s10896-023-00582-y

Martínez-León, N. C., Peña, J. J., Salazar, H., García, A., & Sierra, J. C. (2017). A systematic review of romantic jealousy in relationships. *Terapia Psicológica, 35*(2), 195–204.

Marazziti, D., Dell'Osso, B., Baroni, S., Mungai, F., Catena-Dell'Osso, M., & Dell'Osso, L. (2008). A relationship between love and obsessive–compulsive disorder: A comparative study. *Psychopathology, 41*(3), 129–134.

McHoskey, J. W. (1999). Machiavellianism, intrinsic versus extrinsic goals, and social interest: A self-determination theory analysis. *Motivation and Emotion, 23*(4), 267–283. https://doi.org/10.1023/A:1021338809469

Melli, G., Bulli, F., Doron, G., & Carraresi, C. (2018). Maladaptive beliefs in relationship obsessive compulsive disorder (ROCD): Replication and extension in a clinical sample. *Journal of Obsessive-*

Compulsive and Related Disorders, 18, 47–53.

Metzler-Baddeley, C., Hunt, S., Henson, R. N., & Rowe, J. B. (2016). Cognitive control in obsessive-compulsive disorder: A functional neuroimaging study. *Neuropsychologia, 81*, 34–41.

Mikulincer, M., & Shaver, P. R. (2016). *Attachment in adulthood: Structure, dynamics, and change* (2nd ed.). Guilford Press.

Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual Review of Neuroscience, 24*(1), 167–202. https://doi.org/10.1146/annurev.neuro.24.1.167

Moroz, S., Chen, S., Daljeet, K. N., & Campbell, L. (2018). The Dark Triad and break-up distress. *Personality and Individual Differences, 132*, 52–59. https://doi.org/10.1016/j.paid.2018.05.031

Nepryakhin, N. (2019). Classification of vulnerability factors in the process of psychological manipulation. In *Proceedings of The International Conference on Advanced Research in Social Sciences*.

Ochsner, K. N., & Gross, J. J. (2005). The cognitive control of emotion. *Trends in Cognitive Sciences, 9*(5), 242–249. https://doi.org/10.1016/j.tics.2005.03.010

Papageorgiou, C., & Wells, A. (2003). An empirical test of a clinical metacognitive model of rumination and depression. *Cognitive Therapy and Research, 27*(3), 261–273. https://doi.org/10.1023/A:1023910315561

Pallant, J. (2020). *SPSS Survival Manual: A Step by Step Guide to Data Analysis using IBM SPSS* (7th ed.). McGraw-Hill Education.

Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality, 36*(6), 556–563. https://doi.org/10.1016/S0092-6566(02)00505-6

Raichle, M. E. (2015). The brain's default mode network. *Annual Review of Neuroscience, 38*, 433–447.

https://doi.org/10.1146/annurev-neuro-071013-014030

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors, and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics, 2*(1), 21–33.

Senkans, S., McEwan, T. E., Skues, J., & Ogloff, J. R. (2016). Development of a relational rumination questionnaire. *Personality and Individual Differences, 90*, 27–35.

Siegel, S., & Castellan, N. J. (1988). *Nonparametric Statistics for the Behavioral Sciences* (2nd ed.). McGraw-Hill.

Sha, Z., Versace, A., Edmiston, E. K., Fournier, J., Graur, S., Greenberg, T., & Phillips, M. L. (2020). Functional disruption in prefrontal-striatal network in obsessive-compulsive disorder. *Psychiatry Research: Neuroimaging, 300*, 111081. https://doi.org/10.1016/j.pscychresns.2020.111081

Selçuk, E., Günaydın, G., Sümer, N., & Uysal, A. (2005). Yetişkin bağlanma boyutlarının ilişkisel ve bireysel değişkenlerle ilişkileri: Güvenirlik ve geçerlik çalışması. *Türk Psikoloji Yazıları, 8*(16), 1–11.

Sümer, N., Güngör, D., & Deniz, M. E. (2009). Yetişkin Bağlanma Ölçeği'nin (ECR-R) Türkçe uyarlaması: Geçerlik ve güvenirlik çalışması. *Türk Psikoloji Dergisi, 24*(63), 131–144.

Sümer, N., & Güngör, D. (1999). Bağlanma ölçeklerinin psikometrik özellikleri: Güvenirlik ve geçerlik. *Türk Psikoloji Dergisi, 14*(43), 35–45.

Szepsenwol, O., Shahar, B., & Doron, G. (2016). Letting it linger: Exploring the longitudinal effects of relationship-related obsessive-compulsive phenomena. *Journal of Obsessive-Compulsive and Related Disorders, 11*, 101–104.

Tabachnick, B. G., & Fidell, L. S. (2013). *Using Multivariate Statistics* (6th ed.). Boston: Pearson Education.

Tang, Y.-Y., Hölzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature*

Reviews Neuroscience, 16(4), 213–225. https://doi.org/10.1038/nrn3916

Tian, L., Meng, C., Jiang, Y., Tang, Q., Wang, S., Xie, X., ... & Wang, J. (2016). Abnormal functional connectivity of brain network hubs associated with symptom severity in treatment-naive patients with obsessive–compulsive disorder: a resting-state functional MRI study. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 66*, 104–111.

Tosun, A., Irak, M., & Erciyes, A. A. (2017). Bilişsel Dikkat Sendromu Ölçeği: Geçerlik ve güvenirlik çalışması. *Klinik Psikiyatri Dergisi, 20*(1), 22–30. https://doi.org/10.5505/kpd.2017.44599

Trak, E., & İnözü, M. (2017). Partner İlişkili Obsesif Kompulsif Belirti Envanteri'nin (PROCSI) Türkçe formunun geçerlik ve güvenirlik çalışması. *Klinik Psikiyatri Dergisi, 20*(1), 24–34. https://doi.org/10.5505/kpd.2017.93063

Trak, E., & Inozu, M. (2019). Developmental and self-related vulnerability factors in relationship-centered obsessive compulsive disorder symptoms: A moderated mediation model. *Journal of Obsessive-Compulsive and Related Disorders, 21*, 100457.

Trak, E., & İnözü, M. (2022). Romantik ilişki temalı obsesif kompulsif belirtilerin değerlendirilmesi: Romantik İlişki Obsesyon ve Kompulsiyonları Ölçeği'nin Türkçe formunun geçerlik ve güvenirliği. *Klinik Psikiyatri Dergisi, 25*(3), 320–329. https://doi.org/10.5505/kpd.2022.93063

Ueda, R., Yanagisawa, K., Ashida, H., & Abe, N. (2018). Executive control and faithfulness: Only long-term romantic relationships require prefrontal control. *Experimental Brain Research, 236*(3), 821–828.

Wells, A. (2000). *Emotional disorders and metacognition: Innovative cognitive therapy*. Chichester: Wiley.

Wells, A. (2009). *Metacognitive therapy for anxiety and depression*. New York: Guilford Press.

Wells, A., & Matthews, G. (1996). Modelling cognition in emotional disorder: The S-REF model. *Behaviour Research and Therapy, 34*(11–12), 881–888. https://doi.org/10.1016/S0005-7967(96)00050-2

Williams, K. M., & Paulhus, D. L. (2004). Factor structure of the Short Dark Triad: A replication and extension. *Personality and Individual Differences, 51*(5), 609–613.

Yang, Y., Knight, T., Moulding, R., & Norberg, M. M. (2018). The role of metacognition in obsessive-compulsive disorder: A systematic review. *Clinical Psychology Review, 61*, 60–72.

Young, K. S., Van Kirk, N., & Dirks, M. A. (2019). The interpersonal context of obsessive-compulsive disorder: A review and integration. *Clinical Psychology Review, 72*, 101753.

Zawadzki, B., Strelau, J., & Wrześniewski, K. (1998). Polish adaptation of the State-Trait Anxiety Inventory. *Polish Psychological Bulletin, 29*(1), 9–21.

APPENDICES

APPENDIX A

SOSYODEMOGRAFİK BİLGİ FORMU

Hangi yaş aralığındasınız?

☐ 18-24 yaş

☐ 25-34 yaş

☐ 35-49 yaş

☐ 50-59 yaş

☐ 60-65 yaş

Cinsiyet:

☐ Kadın

☐ Erkek

Medeni Durum:

☐ Bekar

☐ Evli

☐ Boşanmış

☐ Dul

Eğitim Durumu:

☐ İlkokul

☐ Ortaokul

☐ Lise

☐ Üniversite

☐ Yüksek Lisans

☐ Doktor

APPENDIX B

MACH – IV Makyavelist Kişilik Ölçeği

1. Benim için yararı olmadıkça, bir şeyin gerçek nedenini başkasına söylemem.
2. İnsan ancak yapacağı davranışın ahlaki doğruluğuna inanıyorsa eylemde bulunmalıdır.
3. İnsanları yönetmenin en iyi yolu, onlara duymak istediklerini söylemektir.
4. İnsanların çoğu genel olarak iyi ve nazik kişilerdir.
5. İnsanlar konusunda en güvenilir yol, tüm insanların kötü niyetli olduğunu varsaymak ve sırası geldiğinde gerçek yüzlerini açığa çıkaracaklarını kabul etmektir.
6. Doğruluk (namusluluk) her durumda en iyi politikadır.
7. Yalan söylemenin hiçbir mazereti olamaz.
8. İnsanlar dışarıdan zorlanmadıkça sıkı ve verimli çalışmazlar.
9. Önemli ve namussuz bir insan olmaktansa mütevazi ve namuslu bir insan olmak daha iyidir.
10. Eğer birisinden sizin için bir şey yapmasını istiyorsanız en uygun yol, tüm nedenleri açık olarak belirtmekten çok, karşınızdaki insanın istediği nedenleri söylemektir.
11. Başarılı insanların çoğu, ahlaki olarak da temiz ve çok dürüst insanlardır.
12. Bir başkasına tümüyle güvenen bir insan, kesinlikle kendi başına dert açar.
13. Suçlularla diğer insanlar arasındaki en önemli fark suçluların aptal oldukları için yakalanmış olmasıdır.
14. İnsanların çoğu yüreklidir.
15. Başarılı olabilmek için en geçerli yol, önemli kişilere hoş görünmektir.
16. İnsanlar bütün yönleriyle iyi olmalıdır.
17. Tüm yönleriyle bir başka insanın sırtından geçinen bir insan olamaz.
18. İnsanlar ilerleyebilmek için şu ya da bu biçimde başkalarının çıkarlarını zedelemek zorundadırlar.
19. Eğer bir insan tedavisi olanaksız bir hastalığa yakalanmışsa, o insana acısız ölüm hakkı verilmelidir.
20. İnsanların çoğunun mülkiyetlerini yitirmede yaşadıkları acı, babalarını yitirdiklerinde duydukları acıdan daha ağırdır.

APPENDIX B

MACH – IV Makyavelist Kişilik Ölçeği

1. Tümüyle uyuşuyorum 2. Uyuşuyorum 3. Biraz uyuşuyorum 4. Fikrim Yok

5. Biraz uyuşmuyorum 6. Uyuşmuyorum 7. Tümüyle uyuşmuyorum

APPENDIX C

PARTNERE İLİŞKİN OBSESİF KOMPULSİF BELİRTİ ÖLÇEĞİ

(PİOKBÖ)

Aşağıda insanların romantik ilişkilerinde yaşayabilecekleri deneyimlere ilişkin ifadeler yer almaktadır. **Sizin** yakın ilişkilerinizde neler yaşadığınızı değerlendirmek istiyoruz. Lütfen aşağıdaki ifadelerin yakın ilişkilerinizde deneyimlediğiniz düşünce ve davranışları ne ölçüde yansıttığını belirtiniz. "Partner" ifadesiyle romantik ilişki içinde olduğunuz kişi (eş, sevgili, nişanlı, sözlü vb.) kastedilmektedir.

Rakamlar aşağıda görülen sözlü ifadelere denk gelmektedir:

Bana hiç uygun değil. 0	Bana biraz uygun. 1	Bana orta düzeyde uygun. 2	Bana oldukça uygun. 3	Bana çok uygun. 4

1.	Partnerimin sahip olduğu ahlak düzeyinden memnunum.	0	1	2	3	4
2.	Partnerimin sosyal becerilerini tekrar tekrar gözden geçiririm.	0	1	2	3	4
3.	Partnerimin yeterince akıllı ve derinlik sahibi biri olup olmadığını sürekli sorgularım.	0	1	2	3	4
4.	Partnerimin dış görünüşünden memnunum.	0	1	2	3	4
5.	Partnerimin sosyal becerileri ile ilgili düşünceler beni rahatsız eder.	0	1	2	3	4
6.	Partnerimin ahlaki düzeyine ilişkin şüpheler beni sürekli rahatsız eder.	0	1	2	3	4
7.	Partnerimin zihinsel olarak dengesiz olduğu fikrini aklımdan çıkarmakta zorlanırım.	0	1	2	3	4
8.	Partnerimin yeterince zeki olup olmadığı konusunda çevremdeki insanlardan (arkadaşlarımdan, ailemden vs.) sık sık onay ararım.	0	1	2	3	4

9.	Partnerimle birlikteyken onun fiziksel kusurlarını görmezden gelmekte zorlanırım.	0	1	2	3	4
10.	Partnerimin hayatta “bir şey başarma” becerisini sürekli diğer kadın/erkeklerinkiyle karşılaştırırım.	0	1	2	3	4
11.	Partnerimin zeka seviyesini diğer kadın/erkeklerinkiyle sürekli karşılaştırırım.	0	1	2	3	4
12.	Partnerimin duygusal tepkilerini diğer kadın/erkeklerle karşılaştırma eğilimimi kontrol etmekte zorlanırım.	0	1	2	3	4
13.	Partnerimin yeterince zeki olmadığı düşüncesi beni çok rahatsız eder.	0	1	2	3	4
14.	Partnerimin fiziksel görünüşündeki kusurlarla ilgili düşünceler beni sürekli rahatsız eder.	0	1	2	3	4
15.	Her gün, partnerimin “iyi ve ahlaklı” bir insan olmadığı düşüncesinden rahatsız olurum.	0	1	2	3	4
16.	Partnerimin zeka seviyesinden memnunum.	0	1	2	3	4
17.	Sürekli, partnerimin yeterince ahlaklı olduğuna dair kanıt ararım.	0	1	2	3	4
18.	Partnerimin sosyal konulardaki beceriksizliğine ilişkin düşünceler beni her gün rahatsız eder.	0	1	2	3	4
19.	Partnerim aklıma her geldiğinde görünüşündeki kusurları düşünürüm.	0	1	2	3	4
20.	Partnerimin ahlak düzeyini sürekli incelerim.	0	1	2	3	4
21.	Sürekli, partnerimin sosyal yetersizliklerini telafi etmeye çalışırım.	0	1	2	3	4
22.	Partnerimin duygusal olarak dengesiz olduğuna ilişkin şüpheler beni rahatsız eder.	0	1	2	3	4
23.	Partnerimin sosyal becerilerinden memnunum.	0	1	2	3	4
24.	Partnerimin tuhaf bir şekilde davranıp davranmadığını sürekli incelerim.	0	1	2	3	4

25.	Zihnim partnerimin hayatta başarılı olup olmayacağını değerlendirmekle çok meşguldür.	0	1	2	3	4
26.	Partnerimin fiziksel kusurlarını diğer kadın/erkeklerinkiyle karşılaştırma konusunda kontrol edemediğim bir dürtü hissederim.	0	1	2	3	4
27.	Partnerimi düşündüğümde, modern dünyada başarılı olabilecek türden biri olup olmadığını merak ederim.	0	1	2	3	4
28.	Sürekli, partnerimin iş hayatındaki başarısına dair kanıt ararım.	0	1	2	3	4

Kodlama

Ahlaklılık: 6, 15, 17, 20
Sosyallik: 2, 5, 18, 21
Duygusal İstikrar: 7, 12, 22, 24
Yeterlilik: 10, 25, 27, 28
Dış görünüş: 9, 14, 19, 26
Zeka: 3, 8, 11, 13

APPENDIX D

ROMANTİK İLİŞKİ OBSESYON VE KOMPULSİYONLARI ÖLÇEĞİ (RİOKÖ)

Aşağıda insanların yakın ilişkilerinde yaşayabilecekleri deneyimlere ilişkin ifadeler yer almaktadır. **Sizin** yakın ilişkilerinizde neler yaşadığınızı değerlendirmek istiyoruz. Lütfen aşağıdaki ifadelerin yakın ilişkilerinizde deneyimlediğiniz düşünce ve davranışları ne ölçüde yansıttığını belirtiniz. "Partner" ifadesiyle romantik ilişki içinde olduğunuz kişi (eş, sevgili, nişanlı, sözlü vb.) kastedilmektedir.
Rakamlar aşağıda görülen sözlü ifadelere denk gelmektedir:

Bana hiç uygun değil. 0	Bana biraz uygun. 1	Bana orta düzeyde uygun. 2	Bana oldukça uygun. 3	Bana çok uygun. 4

1.	Partnerimi gerçekten sevmediğim fikrini aklımdan çıkaramam.	0	1	2	3	4
2.	Partnerimle ilgili şüphelerimi aklımdan kolaylıkla çıkarabilirim.	0	1	2	3	4
3.	İlişkimden sürekli şüphe duyarım.	0	1	2	3	4
4.	Partnerimin bana olan sevgisiyle ilgili şüphelerimi aklımdan çıkarmakta zorlanırım.	0	1	2	3	4
5.	İlişkimin doğru olup olmadığını tekrar tekrar kontrol ederim.	0	1	2	3	4
6.	Sürekli, partnerimin beni gerçekten sevdiğine dair kanıt ararım.	0	1	2	3	4
7.	Partnerimi neden sevdiğimi kendime tekrar tekrar hatırlatmam gerektiğini hissederim.	0	1	2	3	4
8.	Partnerimin beni sevdiğinden eminim.	0	1	2	3	4
9.	İlişkimde bir şeylerin "doğru olmadığına" dair düşüncelerden aşırı derecede rahatsız olurum.	0	1	2	3	4
10.	Partnerime olan sevgimden sürekli şüphe duyarım.	0	1	2	3	4
11.	Partnerime sürekli beni sevip sevmediğini sorarım.	0	1	2	3	4
12.	Sık sık ilişkimin "doğru" olduğuna dair onay ararım.	0	1	2	3	4

13.	Partnerimin aslında benimle birlikte olmak istemediği düşüncesi beni sürekli rahatsız eder.	0	1	2	3	4
14.	Partnerimi ne kadar sevdiğimi tekrar tekrar kontrol etmem gerektiğini hissederim.	0	1	2	3	4

Kodlama

Partnere duyulan sevgi: 1, 7, 10, 14
İlişki “doğruluğu”: 3, 5, 9, 12
Partner tarafından sevilmek: 4, 6, 11, 13
Tüm soruların eşdeğer cevaplandığını kontrol etmek için: 2, 8

APPENDIX E

Yakın İlişkilerde Yaşantılar Envanteri-II (Experiences in Close Relationships-Revised)

Ölçek toplam 36 maddeden oluşmaktadır. Ölçeğin 18 maddesi kaçınmacı bağlanma, geri kalan 18 maddesi ise kaygılı bağlanma boyutlarını ölçmektedir.

Kaçınmacı Bağlanma Boyutu: Çift sayı olan maddelerin ortalaması alınarak hesaplanır

Kaygılı Bağlanma Boyutu: Tek sayı olan maddelerin ortalaması alınarak hesaplanır.

Ters kodlanan maddeler: 4, 8, 16, 17, 18, 20, 21, 22, 24, 26, 30, 32, 34, 36.

7'li derecelendirme yöntemine göre:

1 = Hiç katılmıyorum

4 = Ne katılıyorum ne katılmıyorum

7 = Tamamen katılıyorum

Önemli Not: Ölçek maddelerinin bazılarında "yakın olmak" veya "yakınlaşmak" ifadeleri

geçmektedir. Bu ifadelerle kastedilen partnerinizle duygusal yakınlık kurmak, düşüncelerinizi

veya başınızdan geçenleri partnerinize açmak, partnerinize sarılmak ve benzeri

davranışlardır. İlgili maddeler bu tanıma göre cevaplandırılır.

- Maddeler evli çiftler için yeniden düzenlenebilir

(YIYE-II)

Aşağıdaki maddeler romantik ilişkilerinizde hissettiğiniz duygularla ilgilidir. Bu araştırmada sizin ilişkinizde yalnızca şu anda değil, genel olarak neler olduğuyla ya da neler yaşadığınızla ilgilenmekteyiz. Maddelerde sözü geçen "birlikte olduğum kişi" ifadesi ile romantik ilişkide bulunduğunuz kişi kastedilmektedir. Eğer halihazırda bir romantik ilişki içerisinde değilseniz, aşağıdaki maddeleri bir ilişki içinde olduğunuzu varsayarak cevaplandırınız. Her bir maddenin ilişkilerinizdeki duygu ve düşüncelerinizi ne oranda yansıttığını karşılarındaki 7 aralıklı ölçek üzerinde, ilgili rakam üzerine çarpı (X) koyarak gösteriniz.

1----------2----------3----------4----------5----------6----------7

Hiç Kararsızım/ Tamamen katılmıyorum fikrim yok katılıyorum

1. Birlikte olduğum kişinin sevgisini kaybetmekten korkarım.
2. Gerçekte ne hissettiğimi birlikte olduğum kişiye göstermemeyi tercih ederim.

3. Sıklıkla, birlikte olduğum kişinin artık benimle olmak istemeyeceği korkusuna kapılırım.
4. Özel duygu ve düşüncelerimi birlikte olduğum kişiyle paylaşmak konusunda kendimi rahat hissederim.
5. Sıklıkla, birlikte olduğum kişinin beni gerçekten sevmediği kaygısına kapılırım.
6. Romantik ilişkide olduğum kişilere güvenip inanmak konusunda kendimi rahat bırakmakta zorlanırım.
7. Romantik ilişkide olduğum kişilerin beni, benim onları önemsediğim kadar önemsemeyeceklerinden endişe duyarım.
8. Romantik ilişkide olduğum kişilere yakın olma konusunda çok rahatımdır.
9. Sıklıkla, birlikte olduğum kişinin bana duyduğu hislerin benim ona duyduğum hisler kadar güçlü olmasını isterim.
10. Romantik ilişkide olduğum kişilere açılma konusunda kendimi rahat hissetmem.
11. İlişkilerimi kafama çok takarım.
12. Romantik ilişkide olduğum kişilere fazla yakın olmamayı tercih ederim.
13. Benden uzakta olduğunda, birlikte olduğum kişinin başka birine ilgi duyabileceği korkusuna kapılırım.
14. Romantik ilişkide olduğum kişi benimle çok yakın olmak istediğinde rahatsızlık duyarım.
15. Romantik ilişkide olduğum kişilere duygularımı gösterdiğimde, onların benim için aynı şeyleri hissetmeyeceğinden korkarım.
16. Birlikte olduğum kişiyle kolayca yakınlaşabilirim.
17. Birlikte olduğum kişinin beni terk edeceğinden pek endişe duymam.
18. Birlikte olduğum kişiyle yakınlaşmak bana zor gelmez.
19. Romantik ilişkide olduğum kişi kendimden şüphe etmeme neden olur.
20. Genellikle, birlikte olduğum kişiyle sorunlarımı ve kaygılarımı tartışırım.
21. Terk edilmekten pek korkmam.
22. Zor zamanlarımda, romantik ilişkide olduğum kişiden yardım istemek bana iyi gelir.
23. Birlikte olduğum kişinin, bana benim istediğim kadar yakınlaşmak istemediğini düşünürüm.
24. Birlikte olduğum kişiye hemen hemen her şeyi anlatırım.
25. Romantik ilişkide olduğum kişiler bazen bana olan duygularını sebepsiz yere değiştirirler.

26. Başımdan geçenleri birlikte olduğum kişiyle konuşurum.
27. Çok yakın olma arzum bazen insanları korkutup uzaklaştırır.
28. Birlikte olduğum kişiler benimle çok yakınlaştığında gergin hissederim.
29. Romantik ilişkide olduğum bir kişi beni yakından tanıdıkça, "gerçek ben"den hoşlanmayacağından korkarım.
30. Romantik ilişkide olduğum kişilere güvenip inanma konusunda rahatımdır.
31. Birlikte olduğum kişiden ihtiyaç duyduğum şefkat ve desteği görememek beni öfkelendirir.
32. Romantik ilişkide olduğum kişiye güvenip inanmak benim için kolaydır.
33. Başka insanlara denk olamamaktan endişe duyarım
34. Birlikte olduğum kişiye şefkat göstermek benim için kolaydır.
35. Birlikte olduğum kişi beni sadece kızgın olduğumda önemser.
36. Birlikte olduğum kişi beni ve ihtiyaçlarımı gerçekten anlar.

APPENDIX F

CAS-1

1. Son 1 hafta boyunca ne kadar süre kendinizi problemleriniz üzerine düşünüp dururken ya da probleminiz hakkında endişelenirken* buldunuz? (Aşağıdaki sayılardan birini daire içine alın.)

0 1 2 3 4 5 6 7 8

0. Hiçbir zaman

4. Sürenin yarısında

8. Sürenin tamamında

2. Son 1 hafta boyunca ne kadar süre dikkatinizi tehdit edici bulduğunuz şeyler (örneğin; belirtiler, düşünceler, tehlike) üzerine odakladınız? (Aşağıdaki sayılardan birini daire içine alın.)

0 1 2 3 4 5 6 7 8

0. Hiçbir zaman

4. Sürenin yarısında

8. Sürenin tamamında

3. Son 1 hafta boyunca negatif duygularınızla ya da düşüncelerinizle baş etmek için aşağıdakileri ne sıklıkla yaptınız? (Her bir maddenin yanına aşağıdaki ölçekten bir sayı yazınız.)

0 1 2 3 4 5 6 7 8

0. Hiçbir zaman

4. Sürenin yarısında

8. Sürenin tamamında

3.1 Olaylardan kaçındım _____

3.2 Bir şeyler hakkında düşünmemeye çalıştım _____

3.3 Alkol/madde kullandım _____

3.4 Rahatlamak için güvence aradım _____

3.5 Duygularımı control etmeye çalıştım _____

3.6 Belirtilerimi kontrol altına almaya çalıştım _____

4. Aşağıda insanların sahip olduğu bazı inançlar yer almaktadır. Her maddeye ne kadar inandığınızı aşağıdaki ölçekten bir sayıyı seçerek o maddenin yanına yerleştirerek belirtiniz.

0 10 20 30 40 50 60 70 80 90 100

0. Buna hiç inanmıyorum

100. Bunun doğruluğuna tamamen inanıyorum

4.1 Çok fazla endişelenmek* bana zarar verebilir _____

4.2 Endişelenmek* başa çıkmama yardımcı olur _____

4.3 Yoğun duygular tehlikelidir _____

4.4 Olası bir tehdit üzerine odaklanmak beni güvende tutabilir _____

4.5 Düşüncelerimi kontrol edemem _____

4.6 Düşüncelerimi kontrol etmem önemlidir _____

4.7 Bazı düşünceler aklımı kaybetmeme sebep olabilir _____

4.8 Problemlerimi analiz etmek yanıt bulmama yardımcı olacaktır _____