

**THE MEDIATOR ROLE OF MENTALIZATION
IN THE LINK BETWEEN ATTACHMENT
INSECURITY AND ALCOHOL ABUSE**



MERT AKYOL

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THE MEDIATOR ROLE OF MENTALIZATION IN THE LINK BETWEEN
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Assoc. Prof. Dr. Burak KÜNTAY
Institute Director

This thesis was read by us, quality and content as a Master's thesis has been seen and accepted as sufficient.

	Title/Name	Signature
Thesis Advisor's	Dr.Öğr.Üyesi Yasemin Sohtorik İlkmen	
Member's	Doç.Dr. Simay İkier	
Member's	Dr. Ayşe Altan Atalay	

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Name Surname: Mert Akyol

Signature: 

ABSTRACT

THE MEDIATOR ROLE OF MENTALIZATION IN THE LINK BETWEEN ATTACHMENT INSECURITY AND ALCOHOL ABUSE

Akyol, Mert

M.A., Clinical Psychology

Supervisor: Assist. Prof. Yasemin Sohtorik İlkmen

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Research has shown that mentalization capacity is related with the quality of attachment relationships one had in childhood, and lack of mentalization is associated with alcohol abuse. The ability to mentalize develops in relationship with attachment figures, and allows people to think and understand both others and themselves, which helps to deal with circumstances causing distress. In the current study, the relationship between these three concepts is examined. It was hypothesized that mentalization capacity is inversely associated with alcohol abuse and attachment insecurity. Moreover, it was expected that mentalization will act as a mediator in the link between attachment insecurity and alcohol abuse. The results showed that attachment insecurity, including attachment avoidance and attachment anxiety, are positively correlated with deficits in mentalization. While attachment avoidance

significantly predicted alcohol abuse, attachment anxiety did not show the same pattern. Since deficits in mentalization were not found to be correlated with alcohol abuse, there was no ground for the analysis of mediation. These results are discussed in the light of circumstances related with the pandemic and psychometric features of the scales used in the current study. Future studies should take these external factors into consideration and utilize measurement instruments with better psychometric properties.

Keywords: Mentalization, attachment, alcohol abuse

ÖZ

ALKOL KÖTÜYE KULLANIMIYLA BAĞLANMA STİLLERİ ARASINDAKİ İLİŞKİDE ZİHİNSELLEŞTİRMENİN ARACI ROLÜ

Akyol, Mert

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Araştırmalar, zihinselleştirme kapasitesinin kişinin çocukluktaki bağlanma ilişkilerinin niteliğiyle ilişkili olduğunu ve zihinselleştirme eksikliğinin alkol kötüye kullanımı ile ilişkili olduğunu göstermiştir. Zihinselleştirme yeteneği, bağlanma figürleriyle ilişkili olarak gelişir ve insanların hem başkaları hem de kendileri üzerine düşünmelerine ve anlamalarına izin verir. Bu da stresli durumlarla başa çıkmaya yardımcı olur. Bu çalışmada, bu üç kavram arasındaki ilişki incelenmiştir.

Zihinselleştirme kapasitesinin alkol kötüye kullanımı ve güvensiz bağlanmayla ters ilişkili olduğu varsayılmıştır. Bunun yanında, zihinselleştirmenin güvensiz bağlanma ve alkol kötüye kullanımı arasındaki bağlantıda aracı görevi görmesi beklenmiştir.

Sonuçlar, kaçınan bağlanma ve kaygılı bağlanmanın zihinselleştirmedeki eksikliklerle pozitif yönde ilişkili olduğunu göstermiştir. Kaçınan bağlanma alkol kötüye kullanımını anlamlı düzeyde yordarken, kaygılı bağlanma aynı örüntüyü göstermemiştir. Zihinselleştirmedeki eksiklikler alkol kötüye kullanımı ile ilişkili

bulunamadığından, arabuluculuğun analizine zemin oluşmamıştır. Bu sonuçlar, pandemi koşulları ve bu çalışmada kullanılan ölçeklerin psikometrik özellikleri bağlamında tartışılmıştır. Gelecekteki çalışmalar bu dış faktörleri dikkate almalı ve daha iyi psikometrik özelliklere sahip ölçüm araçlarını kullanmalıdır.

Anahtar kelimeler: Zihinselleştirme, bağlanma stilleri, alkol kötüye kullanımı



*To anyone who
experiences mental health issues*



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TABLE OF CONTENTS

PLAGIARISM	iv
ABSTRACT.....	v
ÖZ	vii
DEDICATION	ix
ACKNOWLEDGEMENTS	x
TABLE OF CONTENTS.....	xi
LIST OF TABLES	xiv
LIST OF FIGURES	xv
CHAPTER 1	1
INTRODUCTION	1
1.1. Attachment.....	5
1.1.1. Infant Attachment.....	6
1.1.2. Adult Attachment.....	8
1.2. Alcohol Use.....	13
1.2.1. Definition and History of Alcohol Use	13
1.2.2. Epidemiology of Alcohol Use.....	16
1.2.3. Alcohol Use and Mental Health.....	20
1.2.4. Theories of Alcohol Use	23
1.3. Mentalization.....	30
1.3.1. Definition of Mentalization.....	30
1.3.2. Development of Mentalization.....	31
1.3.3. Mentalization and Mental Health.....	34
1.3.4. Mentalization, Attachment and Alcohol Abuse	36
1.4. Present Study.....	39
CHAPTER 2	43

METHOD.....	43
2.1. Participants.....	43
2.2. INSTRUMENTS.....	45
2.2.1. Demographic Form	45
2.2.2. Alcohol Use Disorders Identification Test (AUDIT)	46
2.2.3. Addiction Profile Index Risk Screening (APIRS)-Alcohol	47
2.2.4. The Mindful Attention Awareness Scale (MAAS).....	47
2.2.5. Reading the Mind in the Eyes Test (RMET)	48
2.2.6. Experiences in Close Relationships-Revised (ECR-R)	49
2.2.7. The Depression Anxiety Stress Scale (DASS).....	50
2.3. Procedure.....	51
CHAPTER 3	52
RESULTS	52
3.1. Descriptive Statistics.....	53
3.1.1. Reliability Analyses and Descriptive Statistics of the Scales	53
3.1.2. Descriptive Statistics and Background Characteristics of Alcohol Use	54
3.2. The Relationship Between Attachment, Mentalization, and Alcohol Use.....	61
3.2.1. Correlations Among Variables.....	61
3.2.2. Results for Hypotheses.....	64
3.3. The Mediator Role of Mentalization.....	65
3.3.1. Post-hoc Analyses	65
CHAPTER 4	68
DISCUSSION	68
4.1. Discussion of the Findings	70
4.1.1. Alcohol Use and Background Characteristics.....	70
4.1.2. The Relationships Among Alcohol Use, Attachment, and Mentalization	72

4.2. Limitations and Further Recommendations	77
REFERENCES.....	81
APPENDICES	99
APPENDIX A	Error! Bookmark not defined.
APPENDIX B	Error! Bookmark not defined.
APPENDIX C	Error! Bookmark not defined.
APPENDIX D	Error! Bookmark not defined.
APPENDIX E	Error! Bookmark not defined.
APPENDIX F.....	Error! Bookmark not defined.
APPENDIX G	Error! Bookmark not defined.
APPENDIX H	Error! Bookmark not defined.

LIST OF TABLES

Table 2.1. Demographic characteristics of participants	43
Table 3.1. Descriptive Statistics for All Scales.....	54
Table 3.2. Frequencies of Alcohol Use (APIRS-alcohol).....	55
Table 3.3. Frequencies of Alcohol Use (AUDIT).....	56
Table 3.4. Significance Levels for All Demographics	61
Table 3.5. Pearson Correlations among outcomes of scales (N = 230)	63
Table 3.6. The Model Summary of Hierarchical Regression Analysis for Alcohol Use	66
Table 3.7. Results of the Hierarchical Regression Analysis for Variables Predicting Alcohol Use.....	67

LIST OF FIGURES

Figure 1.1. Two-dimensional four-category model of adult attachment. From Bartholomew and Shaver (1998) p. 31.	11
Figure 1.2. Development of the infant’s “core self” (Fonagy and Luyten, 2018)	31
Figure 1.3. Formation of “alien self” (Fonagy and Luyten, 2018)	34
Figure 1.4. Malicious patterns of inhibition of mentalizing within drug addiction (Allen et al., 2008)	38
Figure 1.5. The Hypothesized Mediation Effect of Deficits in Mentalization.....	40



CHAPTER 1

INTRODUCTION

Attachment is the solid affectional connection between infants and their caregivers, and its primary function is to provide the feeling of security (Bowlby, 1969). In infancy, this bond aids the infant to regulate his/her emotions by keeping an appropriate proximity to the attachment figure since the caregiver can calm the infant with her voice and physical contact in case of extreme and insuperable emotional crisis (Bowlby, 1988). The quality of the attachment bond, namely secure and insecure, depends on the mother's sensitivity to infant's signals for emotional and physical needs such as comfort and feeding (Bowlby, 1969).

Attachment styles developed in childhood continue to shape a person's adulthood relationships especially those with the significant ones. More importantly, impairments in early attachment relationships predict deficits in emotion regulation and interpersonal problems in adulthood (Mikulincer & Shaver, 2008; Shaver & Mikulincer 2014). For instance, insecurely attached people are more prone to have difficulties with emotion regulation (Cassidy, 1994) as well as to experience psychological distress (Joeng et al., 2017). Researchers also show that there is a link

between psychological distress and substance use (e.g., Kelly et al., 2015; Booth et al., 2010), and attachment insecurity may be a risk factor in the development of substance abuse problems. Although there are some studies showing a relationship between attachment styles and substance use (e.g., Kassel et al., 2007), to the best knowledge of this author, there is a scarcity in studies examining the psychological mechanisms through which attachment styles lead to substance abuse. Thus, this study primarily aims to study the possible associations between attachment styles and mentalization, which in turn may predict alcohol abuse.

Mentalization is a skill to reflect mental states of the self and the others, and it enables to regulate one's own emotions and mental states (Fonagy, Gergely, Jurist, & Target, 2002). It is the ability to comprehend one's own actions, emotions and intentions by observing these processes as if from outside as well as taking others' perspectives (Fonagy & Target, 1998). It is the core of self-awareness and sensitivity to others, meaning that mentalization provides the ground for the development of the ability for self-observation as well as to observe and comprehend others' actions and intentions (Bateman & Fonagy, 2004).

The capacity for mentalization develops through the caregiver's understanding of the infant's emotional changes and responding to them by mirroring back the emotional experiences of the infant; this will then allow the infant to have an ability to understand that others have different minds, and to make assumptions about others' actions (Fonagy, 2000). Moreover, while mirroring the infant's

experiences, the caregiver forms representations of the external world as well as infant's internal world by bringing together similar experiences into meaningful concepts; these representations are the basis of the core self, and they allow the infant to reach inner representations of itself and others (Bateman & Fonagy, 2004).

This capacity, therefore, helps infants to maintain interpersonal relationships through affect regulation, impulse control, self-monitoring and self-agency (Fonagy & Target, 1998). If the mental states of the infant are not contained by "giving back to the baby the baby's own self" by the caregiver (Winnicott, 1971, p.118), the infant will not be able to develop the capacity to manage his/her affects and other internal states. Problems with handling emotional stress and affect regulation, which are associated with deficits in mentalization, are linked with substance abuse as well (Allen, Fonagy & Bateman, 2008). The reason behind this link could be that individuals who have problems with regulating emotions have a tendency to engage in maladaptive behaviors such as deliberate self-harm, disordered eating, binge-watching, and substance use, which serves as a function to regulate emotions (Buckholdt et al., 2014). In the current study, alcohol abuse was chosen to be as a maladaptive solution to emotion regulation difficulties, which is closely related to mentalization (Fonagy, 2006).

To sum up, for individuals struggling with affect regulation, which is directly related with mentalization, alcohol use may be a tool to soothe and reduce fear and anxiety, and to experience more positive feelings (Allen et al., 2008; Flores, 2004).

Additionally, it is known that whenever the infant needs to be comforted, the attachment figures provide an atmosphere to soothe the infant, which is also an important context to increase mentalization capacity during the childhood (Fonagy & Bateman, 2012). A study related to attachment and alcohol use argued that if there is also a case of alexithymia, which is having problems with understanding others' emotions, with insecure attachment, the probability of the diagnosis of alcohol use disorder is much higher (Zakhoul et al., 2020). This finding indicates the importance of mentalization in the course of development of alcohol use disorder. Therefore, it can be argued that attachment, mentalization and alcohol use are interrelated processes. This study is going to examine the mediator role of mentalization in the link between attachment insecurity and alcohol use.

1.1. Attachment

Attachment was described as the solid affectional connection between the infant and a significant other, who provides security function (Bowlby 1969, 1973, 1980; Ainsworth, & Bowlby, 1991). The caregiver provides protection when the infant needs to be taken care of both emotionally and physically (Bretherton, & Munholland, 2008). While the attachment of the infant to his/her primary caregiver is a biological disposition to secure survival, this bond is also a key factor in the psychological development of the infant (Fitton, 2012). In other words, this relationship has a vital impact on the development of later personality of a person (Sroufe & Siegel, 2011).

At the beginning of life, attachment functions as a survival tool via keeping physical proximity to a caregiver, and also helps with affect regulation through sufficient and continuous affective responding by the caregiver (Bretherton, 1992). The infant needs this safe atmosphere mostly in times of high affective arousal to reduce the stress and explore the world in the presence of the attachment figure (Sroufe & Waters, 1983). In other words, the attachment bond between an infant and his/her caregiver helps to protect the infant in case of extreme situations that infant is not able to cope with by his/her own (Ainsworth et al., 1978).

The quality of attachment depends on the maternal sensitivity to the infant's needs including how the caregiver interprets these needs, how fast and accurately

she/he responds to them, if she/he sees the infant as a separate human being, and if she/he is able to allow the infant to engage with an ongoing activity (Ainsworth et al., 1971). The interaction with the caregiver helps the infant to build relationship representations, which Bowlby and Ainsworth (1991) called “the internal working models of attachment.” Representational models depend on how much ‘self’ is lovable, ‘other’ is accepting and dependable, and ‘relationship’ is secure (Sroufe & Fleeson, 1986). Differences in these models concerning self, other and relationship are linked with attachment security of an individual (Bretherton, 1985). These internalized working models of the "self", "other" and "relationship" continue to impact future relationships. In other words, internal working models are based on early interactions in the infant's first relationships with the caregiver, and in subsequent situations they influence the perception and actions of the infant (Chinitz, 1995). Furthermore, these models serve as a mental template to understand and predict actions of others and help to form a meaningful environment.

1.1.1. Infant Attachment

Mary Ainsworth created “the strange situation task” to assess the quality and the organization of the parent-infant attachment and infant’s internal working models in action (Ainsworth et al., 1978). It helped experimenters to observe different attachment behaviors to decide whether the infant is securely or insecurely attached, which is categorized as anxious attachment and avoidant attachment (Fraley, 2010). In this task, infants, who are between 18 months and the age of nine, are separated

from their mothers for a while and then reunited; researchers monitor the infants' reactions throughout these separation and reunion situations (Bretherton, 1992).

In the Strange Situation, infants with secure attachment are ready to discover their surroundings while the mother is in the room although they are distressed when the mother leaves the room, and they seek contact with caregiver upon their return to get reassurance which then leads them to continue exploring (Ainsworth et al., 1978). However, infants classified as insecurely attached give different responses when separated from their caregivers, including behaviors such as not seeking proximity with the mother upon her return or having difficulty in settling down, and showing anger (Ainsworth et al., 1978).

Infants with anxious attachment give signs of anxiety in the presence of their mother, exhibit extreme distress during mother's absence, and give ambivalent responses upon mother's return by seeking proximity and resisting contact at the same time. Infants with avoidant attachment show little emotional reaction such as crying when separated from the mother and have no interest for proximity after reunion (Ainsworth et al., 1978). Furthermore, Main and Solomon (1990) added a third category which they called disorganized attachment. These infants give odd, unusual, contradictory or conflicted reactions without any reason during all kinds of situation. For example, in the Strange Situation, these infants might freeze suddenly as a sign of dissociation or seek proximity to the stranger instead of the caregiver. They behave in a "lacking coherent pattern" (Schneider, 2014, p. 339), and

experience “random fluctuations” (Mikulincer and Shaver, 2017, p. 143) in their behaviors.

The Strange Situation paradigm provided an experimental setting to classify different attachment styles by observing infants’ behaviors. Studies supported the idea that these attachment patterns in infancy become permanent after a while and similar attachment styles are observed in adulthood (Hazan & Shaver, 1987; 1994). In the next section, adult attachment patterns will be described and their relative impact on adult behavior, relationships, and mental health will be discussed.

1.1.2. Adult Attachment

Attachment patterns in romantic relationships have similarities with attachment patterns in infant-caregiver relationship (Hazan & Shaver, 1987). The major distinction is that romantic relationships contain two people in need unlike caregiver-infant relationship in which the infant is totally dependent on the caregiver (Schachner et al., 2003). Despite this distinction, similarities include sense of security in the presence of the significant other, seeking physical proximity, feeling insecure when the significant other is not around, and engaging in “baby talk.” (Schachner et al., 2003).

The idea that relationship patterns with attachment figures established in infancy have a huge influence on relationships in later life (Bowlby, 1969; Collins &

Read, 1990) was proved by comparing adult attachment styles of individuals with their infant attachment categories in longitudinal studies (Hazan & Shaver, 1987; 1994). One study showed that 72% of the young adults were categorized to have the same attachment style that they had 20 years ago, and for the remaining participants the categories might have changed as result of adverse life circumstances, a prediction foreseen by the attachment theory (Waters et al., 2000). In a longitudinal study looking for the stability of the attachment style from childhood to adolescence, although they were significantly related to each other, there were category changes due to negative life events (Hamilton, 2000). Another study showed that continuity of the attachment classification highly depends on the presence of adverse life experiences, and changes from secure pattern to insecure pattern were evident as a function of chaotic experiences (Weinfield, Sroufe, & Egeland, 2000).

Hazan and Shaver (1987) suggested that adult attachment system has the same function of seeking security as infant attachment system. There are three types of adult attachment styles, namely secure, anxious and avoidant (Hazan & Shaver, 1987). Individuals with secure attachment are able to seek physical proximity without any discomfort or fear of being abandoned, and feel assured that their partners will be there for them when they need it. They are open to rely on others, and believe that others will rely on them (Hazan & Shaver, 1987).

In comparison to securely attached individuals, those with avoidant attachment worry when they are close to someone, and do not prefer to be dependent

on others. They do not want intimacy as much as others. They also have difficulties with verbalizing their feelings and emotions. Lastly, people with anxious attachment fear abandonment and want to be close as much as they can while they easily get frustrated in case of unmet attachment needs. They mostly fear that their partners do not love them back as they do, and their wish to be very close with their partners might scare their partners away. They are also afraid of being alone since they need constant reassurance of affection from others (Hazan and Shaver, 1987).

Later on, Bartholomew (1990) introduced an adult attachment pattern model called “four category models” building upon Main’s (Main et al., 1985) and Hazan and Shaver’s (1987) theories. She combined the intersection of two dimensions of internal working models, which are attachment-related avoidance and attachment-related anxiety. An individual’s stance on the anxiety dimension shows the extent to which she or he gets anxious that the significant other will not be ready to respond when she or he requires something from the partner. An individual’s stance on the avoidance dimension shows the degree to which he or she do not have confidence in romantic partners’ intentions and endeavors to sustain independence, personal space and emotional distance. From these dimensions she constructed a two-dimensional model of adult attachment, one dimension composed of self-representations (positive or negative) and the second dimension other-representations (positive or negative). These then result in four attachment patterns: secure, dismissing, preoccupied and fearful (see *Figure 1.1*).

The *self* dimension of the model includes positive model of the self on the one end and the negative model of the self on the other. This dimension explains one's sense of self-worth, and the degree of autonomy (positive *self* model) and anxiety (negative *self* model) felt in intimate relationships. The *other* dimension of the model likewise is composed of positive model of the other on one end and negative model of the other on the opposite end. This dimension explains the sense of trust one has in others, e.g., how ready others are to support you, which determines the inclination to search for (positive *other* model) or refrain from intimacy (negative *other* model) (Bartholomew and Horowitz, 1991).

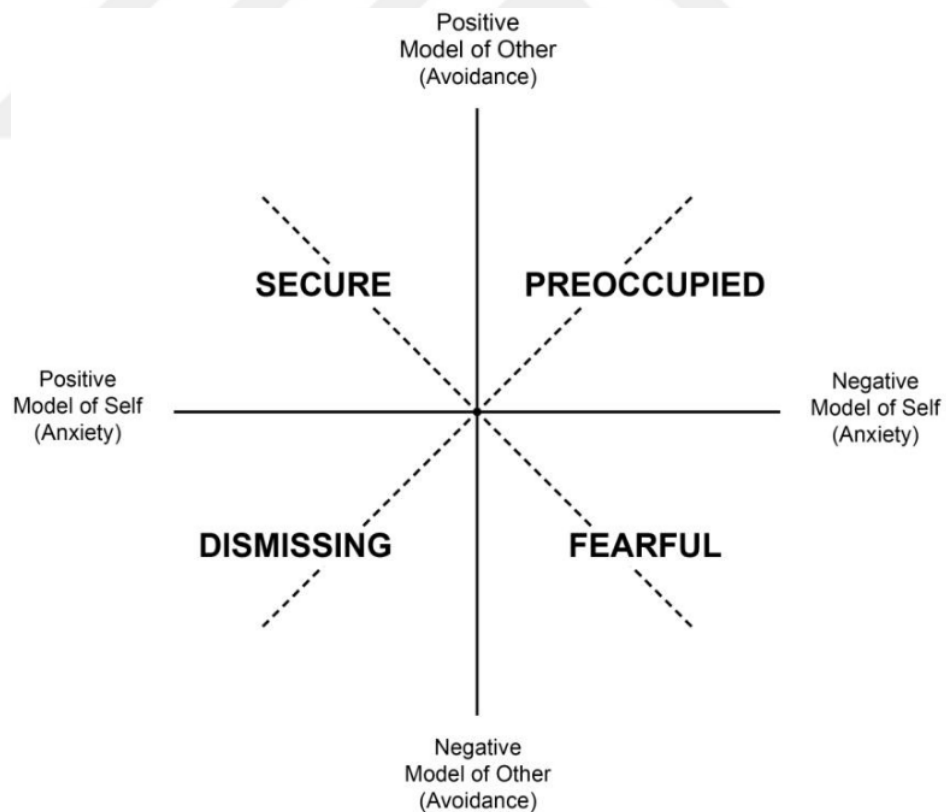


Figure 1.1. Two-dimensional four-category model of adult attachment. From Bartholomew and Shaver (1998) p. 31.

According to the Four Category Model, securely attached (positive self- and other- model) adults have an internalized sense of self-worth, high self-esteem and perceive others as supportive and accessible with whom they are comfortable being intimate (Barholomew & Horowitz, 1991). They have the capacity to get close while maintaining personal autonomy. Preoccupied attachment patterns are indication of negative model of self and positive model of others (Wearden et al., 2005). These individuals have low self-esteem and pay attention to negative affect while the most significant need is to get approval from others in their life, so they become over-dependent on others. They experience anxiety in intimate relationship, and yet, they continue to seek out closeness and reassurance from others. Individuals with fearful attachment have both negativity of self and others. Their sense of self is similar to people with preoccupied attachment but they do not have positive feelings for others either. They experience anxiety in close relationships, and tend to avoid intimacy in order to prevent possible rejection. Lastly, dismissively attached people avoid close relationships due to negative perceptions of others, yet, they are inclined to have a positive sense of self. These individuals are inclined to deny the importance of intimate relationships and exhibit a persona of self-sufficiency (Barholomew & Horowitz, 1991).

According to attachment theory, insecure attachment patterns decrease the chance of coping with stressful life events and increases the probability of having a psychological breakdown in times of crisis (Bowlby, 1988). In line with this, the

recent studies have suggested that attachment insecurity is linked with psychological disorders including depression (e.g., Lee & Hankin, 2009), anxiety (e.g., Kerns & Brumariu, 2014), obsessive-compulsive disorder (e.g., Wiltgen et al., 2015), post-traumatic stress disorder (e.g., Ogle et al., 2015), suicidal tendencies (e.g., Sheftall et al., 2014), personality disorders (e.g., Meyer & Pilkonis, 2005), and eating disorders (e.g., Illing et al., 2010). Therefore, it can be argued that attachment insecurity might be a major risk factor for various mental disorders, including alcohol abuse. In the next section, alcohol use will be reviewed and discussed.

1.2. Alcohol Use

1.2.1. Definition and History of Alcohol Use

Alcoholic beverages, such as wine and beer, have been known to be the first recreational substances used by humans, as such alcohol use has a long history (Sahiner, 2012). In ancient times, alcohol was produced and consumed by fermenting fruits (McKim, 2000). Naturally, the history of alcohol use problems is as old as the production and consumption of alcohol. For example, it has been argued that the death of Great Alexander was due to alcohol abuse (Sahiner, 2012). Excessive alcohol use was defined as a “disease” for the first time in 18th century by Dr. Benjamin Rush (Katcher, 1993), a physician who took an approach against excessive alcohol use and recommended abstinence. Dr. Magnus Huss, a Swedish physician who was interested in chronic alcohol consumption, used the term “alcoholism” for the first time in 1849 (Coşkunol, & Altıntoprak 1999). Mark Keller, a pioneer in

alcohol research, proposed a more comprehensive definition of alcoholism. He defined it as an ongoing behavioral disorder impacting the nutrition, body, mind, and social lives of people (Mırsal, & Kalyoncu, 2000). Alcoholics Anonymous was established in 1935, and they published a book on alcoholism in 1939 (Bill, 1976). The American Medical Association started to classify “alcoholism” as a medical disease since 1956 (JAMA, 1956).

In 1987, the revised third edition of The Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R), which is a handbook for practitioners to diagnose mental disorders, used the term “alcohol dependency” instead of “alcoholism” (APA, 1987). In 2000, the text revision of the fourth edition of the DSM (DSM-IV-TR) divided alcohol related disorders into two categories, namely alcohol abuse and dependence. Thus, abuse and dependence have become two distinct categories with different diagnostic criteria (O’Brien, 2011). Although there is a substantial convergence between the fifth edition of the DSM (DSM-5) and DSM-IV-TR, there are various distinctions. In 2013, DSM-5 incorporated these two categories, alcohol abuse and dependence, into a single disorder called alcohol use disorder (AUD), which is further categorized into mild, moderate and severe use (APA, 2013). The diagnostic criteria for AUD described in DSM-5 are listed below (APA, 2013):

A. A problematic pattern of alcohol use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:

1. Alcohol is often taken in larger amounts or over a longer period than was intended.

2. There is a persistent desire or unsuccessful efforts to cut down or control alcohol use.

3. A great deal of time is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects.

4. Craving, or a strong desire or urge to use alcohol.

5. Recurrent alcohol use resulting in a failure to fulfill major role obligations at work, school, or home.

6. Continued alcohol use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol.

7. Important social, occupational, or recreational activities are given up or reduced because of alcohol use.

8. Recurrent alcohol use in situations in which it is physically hazardous.

9. Alcohol use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.

10. Tolerance, as defined by either of the following:

- a. A need for markedly increased amounts of alcohol to achieve intoxication or desired effect.
- b. A markedly diminished effect with continued use of the same amount of alcohol.

11. Withdrawal, as manifested by either of the following:

- a. The characteristic withdrawal syndrome for alcohol (refer to Criteria A and B of the criteria set for alcohol withdrawal, pp. 499-500).
- b. Alcohol (or a closely related substance, such as a benzodiazepine) is taken to relieve or avoid withdrawal symptoms (pp. 490-491).

1.2.2. Epidemiology of Alcohol Use

Health problems related with alcohol use are common in the world (National Institute on Alcohol Abuse and Alcoholism, 2018). According to the World Health Organization (WHO, 2014) excessive alcohol use is a worldwide public health issue that accounts for about 6 percent of the fatalities worldwide. It is known that acute and long-term medical problems are linked with AUD (Rehm et al., 2006), and it interferes with medical treatments due to inadequate adherence (Springer et al., 2010; Ahmed et al., 2006). Furthermore, alcohol abuse and AUD are correlated with

intentional and non-intentional accidents, romantic relationship abuse, unemployment and reduced job efficiency (Yu et al., 2019; Graham et al., 2011; Leonard, 2005; Zaleski et al., 2010).

a. USA

According to the National Survey on Drug Use and Health (NSDUH) conducted in 2019, in the United States, 85.6% of the people ages 18 and older reported that they consumed alcohol at least once in their life; 69.5% informed that they consumed alcohol in the past year; 54.9% informed that they consumed alcohol in the past month. In the same survey, 25.8% of people ages 18 and older reported that they had an experience of binge drinking while 6.3% of them reported that they had an experience of heavy drinking in the last month (NSDUH, 2019).

A comprehensive substance use survey of more than 14,000 college students from 119 higher education institutions found that 31% of university students were diagnosed with alcohol dependence based on DSM-IV diagnostic criteria (Knight, Wechsler, Kuo, Seibring, Weitzman, & Schuckit, 2002). A more recent survey showed that 33% of college students between the ages of 18 and 22 engaged in binge drinking in the past month (NSDUH, 2019). Also, another national survey revealed that about 20% of people between the ages of 12 and 20 were current alcohol users, 40% of young adults, ages 18 to 25, were binge drinking alcohol, and 10% of them were heavy alcohol users (Substance Abuse and Mental Health Services Administration, 2017).

It was found that the life time prevalence of alcohol dependency is 5.4%, while the life time prevalence of alcohol abuse is 13.2% in the USA (Kalaydjian et al., 2009). A recent survey showed that 5.6% of people using alcohol was diagnosed with AUD (NSDUH, 2019).

b. Europe

Anderson and Boumberg (2006) noted that in Europe alcohol use reached its highest level in the mid-1970s, measured as fifteen liters of alcohol use per person which suggests that the European Union is the region with largest alcohol use in the globe. In a more recent study, 11.8% of people was diagnosed with AUD across six countries (Germany, Hungary, Italy, Latvia, Poland, and Spain) while 7.3% of people was diagnosed with AUD among the European general population (Jakob et al., 2016). Another study showed that 15% of the Europeans had claimed that they have never drank alcohol, while 44% drank beer, 34% of them drank wine, and 23% drank hard liquors (Taskent, 2010).

c. Turkey

There are some studies conducted on the prevalence of alcohol consumption in Turkey, but it is still relatively less researched topic compared to other countries. A comprehensive study by Ögel, Tamar, Evren, and Çakmak (2001) that examined the consumption of tobacco, alcohol and drugs in 15 different cities with 20,245 high school students ages from 15 to 17 found that 17.3% of them consumed alcohol at

least once in the last month, and 9% of them consumed alcohol at least once a week. In another study conducted at Ege University, the researchers investigated alcohol use and dependency using Michigan Alcoholism Screening Test, and found that 76% of students used alcohol. Also, they indicated that 77.2% of the students who used alcohol had no alcohol issues, 14% of them had alcohol abuse, and 8.8% had alcohol dependency based on their scores on the Michigan Alcoholism Screening Test (Yigit & Khorshid, 2006).

In 2008, to analyze the intake and prevalence of alcohol consumption during the last five years in Turkey, Şahin prepared a report for Consumers Union (Tüketiciler Birliği). According to his findings, alcohol consumption almost doubled and reached 950 million liters between 2003 and 2008 (Şahin, 2008). Beer was the most frequently used alcoholic beverage making up the 90% of this volume. Besides, it is found that the age to start drinking decreased to 11 years of age, and 15.4% of the students used alcohol in elementary school, while 45-50% of the students in high school have used alcohol at least once in their lifetime. The prevalence rate of alcohol consumption among university students was found to be between 43% and 53, 9% (Consumers Union, 2008). Another study showed that lifetime prevalence of alcohol use is 13% in the general population, where the rates changed dramatically between genders, 23.4% in males and 4.4% in females between ages of 15 and 24 (Ergör et al., 2011).

According to WHO (2014), the abstinence rate in Turkey was 79.6%, and a 12-month prevalence rate for AUD and alcohol dependence in Turkey were 2.7% and 0.8%, respectively. Most recently, in İzmir researchers examined 12-month prevalence of regular heavy drinking, AUD, and dependence, and they found that participants reported regular heavy drinking, alcohol abuse and dependence at the rate of 2.5%, 3.2% and 1.6% respectively (Ulas et al., 2017).

It can be argued that alcohol use is highly prevalent among students of all ages, considering the studies that have been conducted in Turkish student populations. However, despite these findings, alcohol use, heavy drinking rates, and AUD in Turkey are among the lowest compared with other Europe Zone countries (WHO, 2018). Yet, problematic alcohol consumption trends should not be ignored among young adults in Turkey due to potentially dangerous consequences.

1.2.3. Alcohol Use and Mental Health

There are various negative outcomes of alcohol use on the brain. Alcohol interferes with brain functioning, depressing one of the brain's excitatory neurotransmitters, glutamate, which results in decreasing activity in different parts of the brain (Koob et al., 2002). Alcohol intoxication interferes with learning, decision making and behavioral inhibition (Brick, 2008). These immediate negative effects can cause irreversible damages. For instance, lack of attention, and deficits in coordination may emerge even with a few drinks and can hinder the ability to drive

causing accidents (Hoiseth et al., 2015; Brick, 2008). Even a single glass of alcohol increases the chance of having an automobile accident significantly in comparison with being completely sober (Phillips & Brewer, 2011).

These intoxication effects are replaced with other outcomes called “hangover” in the following day, in which the person may suffer from headache, nausea, fatigue and cognitive impairments (Verster et al., 2010). Once people are sober, they may experience amnesia, called as a blackout, for the time they were under the influence of alcohol (Ruiz & Strain, 2014). Moreover, people with extreme intoxication may end up with shock and coma (Gallagher et al., 2019). Extreme alcohol intake can be fatal even if one is not chronic alcohol abuser (Brick, 2008). For example, large doses of alcohol are responsible for tens of thousands of Americans’ deaths every year as a result of lung infections and acute lung injuries (Mehta & Guidot, 2017).

Furthermore, alcohol use has also long-term effects concerning one’s mental and physical health, and social relationships including neuropsychiatric disorders, cardiovascular diseases, liver diseases, various cancers, infectious diseases such as HIV/AIDS, traffic accidents, violence, suicide, familial problems, and early death (WHO, 2018). Heavy and prolonged use of alcohol can damage many systems of the body (Paul et al., 2011). It is known that liver that handles alcohol in body can suffer irreversible damage due to alcohol use (Lucey et al., 2009). For example, from 15 to 30% of heavy drinkers develop cirrhosis of the liver (Centers for Disease Control and

Prevention (CDC), 2015b). Along with the liver problems, malnutrition is another health problem for alcohol users. It is a high calorie drink which may lead to obesity; it also decreases one's appetite preventing consumption of healthy foods (Connor et al., 2016). Moreover, excessive alcohol use has an impact on the development of dementia (Rehm et al., 2019). For instance, neuroimaging studies showed that heavy and prolonged use of alcohol is associated with cognitive impairments, and diminished performance on cognitive tests, and these outcomes can last even after one has stopped drinking (Nolen-Hoeksema, 2020).

Along with the health-related outcomes of excessive alcohol use, there are also problems related to mental health and interpersonal relationships. It is known that heavy drinkers generally experience chronic fatigue, oversensitivity, and depression; they may lose interest in personal appearance, neglect family members, and feel irritable and lack of motivation to solve their problems (Hooley et al., 2019). Domestic violence is also associated with alcohol abuse. According to WHO (2018), perpetrators of domestic violence consume alcohol beforehand the abuse. According to a study examining intimate partner violence, men with alcohol dependence are six or seven times more inclined to be involved in domestic abuse against women than others (Yu et al., 2019). Although it might be difficult to establish cause-and-effect relationship between alcohol and domestic violence, it was suggested that severity of the violence increases with the consumption of alcohol (Graham et al., 2011; Leonard, 2005).

Both short-term, and long-term effects of excessive alcohol consumption might be fatal. In 2018, it was estimated by WHO those 3 million deaths are due to problematic use of alcohol every year, which falls accounts for 5.3% of total deaths globally. For instance, alcohol-related injuries due to car accidents, drowning, burns, and poisoning are prevalent, and cause approximately 600,000 deaths per year worldwide (WHO, 2014). Alcohol abuse has more influence on death rate than diabetes (2.8%), digestive system diseases (4.5%), traffic accidents (2.5%), tuberculosis (2.3%), HIV/ AIDS (1.8%), and hypertension (1.6%) (WHO, 2018). It was reported that in Turkey 3170 deaths were attributed to alcohol use in 2016 (WHO, 2018). Furthermore, it accounts for 5% of the worldwide disability adjusted life years (DALYs), which represents “the loss of the equivalent of one year of full health;” DALYs is an index calculated by the sum of the years of life lost due to premature mortality and the years lived with a disability due to prevalent cases of the disorder in a population since mortality rates alone do not represent the whole burden of the diseases (WHO, 2014).

1.2.4. Theories of Alcohol Use

According to Polcin (1997) the risk factors that contribute to the development of alcohol use problems are biological, socio-cultural, and psychological. It should be noted that all of the risk factors mentioned contribute to the etiology of the disorder although the relative influence of these factors may change from person to person.

Neurobiological aspects of addiction have been studied for a long time. The “pleasure pathway”, the mesocorticolimbic dopamine pathway (MCLP), plays the central role in addictions (Connor et al., 2016). It is known that alcohol generates elation by stimulating this area in the brain (Volkow & Boyle, 2018). A study has shown that direct electrical stimulation of the MCLP generates euphoria and has powerful reinforcing aspects (Littrell, 2001). Another study related to MCLP showed that these are related to the reward system, anticipation and valuation, which influence addictive behaviors (Schultz, 2011). Moreover, if the reward network activates more than control network, people are more inclined to use alcohol (Goldstein & Volkow, 2002; Hutchison, 2010).

It has long been noted that alcoholism runs in families, but that alone is not enough to prove that *genetic* factors contribute to risk. Many separate lines of evidence suggest genetic contributions to its etiology. Twin and adoption studies have shown that genes have a role in alcohol dependency (Verhulst et al., 2015). People who have alcohol-dependent parents are more inclined to be alcohol-dependent, and the heritability of alcohol dependency is about %50 (Friedel, Kaminski, & Ripke, 2021). However, it should be stressed that while genetic variations affect risk, there is no "alcoholism gene," and it is possible that alcohol dependency and AUD are due to differences in hundreds of genes interacting with various social conditions, as in most complex disorders (Edenberg & Foroud, 2013).

Socio-cultural aspects of the etiology of alcohol use should be considered as well. Our environment, such as our occupation, influences drinking habits. For instance, people in the army, and people who work as bartenders and tourist guides may find more occasions for alcohol consumption (Mırsal & Kalyoncu, 2000). It is not only the environment we choose, but also the culture we are born into which impacts drinking habits. For example, alcohol consumption is higher in some countries such as Italy, France, and Spain, and this may be related with the fact that it is culturally more acceptable to consume alcohol in daily life (Mırsal & Kalyoncu, 2000). Furthermore, the effect of social environment on drinking behavior changes as a function of one's social group. Especially among college students, alcohol use is promoted by peers and it is believed that using alcohol will have positive consequences in their socialization including approval by a group of friends (Scheier & Bolvin, 1997). Yet, this turns into a coping mechanism in later life, which may lead to serious problems (Scheier & Bolvin, 1997).

There are different explanations in *psychological* causes of alcohol use. According to social learning theory, the development of alcohol dependency is related with consequences of classical and instrumental conditioning (Goldman et al., 1991; Rohsenow et al., 1994). More recently, self-regulation theory, which involves three stages including self-monitoring, self-evaluation and self-reinforcement, explains alcohol use problems as a function of dysfunction in self-regulation (Hustad et al., 2009). Lower capacity of self-regulation decreases the chance of creating adaptive choices to deal with stressors as well as diminishing the ability to monitor

the results of them. In addition, individuals with low self-regulatory capacities tend to seek immediate gratification, which might lead to alcohol consumption (Hustad et al., 2009). For example, studies have indicated that individuals who exhibit high self-control or self-regulation are less likely to develop alcohol dependency since when people are able to self-regulate, they can recognize self-destructive behaviors, and change either the behaviors or the environment (Patoock-Peckham et al., 2001).

According to the tension-reduction theory, alcohol use serves the purpose of reducing stress levels. After people engage in drinking in a social setting, they realize the stress reduction feature of alcohol, which becomes a negative reinforcement to continue using alcohol (Bandura, 1971). According to many cognitive theorists, using alcohol as a stress reduction strategy might lead to alcohol dependency (Blane, & Leonard, 1987; Wilson, 1987; Finn, & Hall, 2004).

Freud described a relationship between substance addiction and psychological functioning stating that problems in psychological functioning led to substance addiction (Freud, 1897). He proposed that the initial addiction was masturbation, while drug addiction was a substitution and reconstruction of masturbation addiction (Freud, 1898). Freud pointed out that addiction, as in masturbation, is a way of finding gratification without "meeting another human" (Freud, 1928). Other psychoanalytic theorists view alcohol dependency as an oral fixation in psychosexual development, which was caused by frustration or over gratification during the oral stage (Bornstein, 1996). Oral personality shows over-dependence on mother and other objects like maternal breast; this dependency shows

itself in addiction behavior in adulthood since alcohol, cigarettes, and other substances provide satisfaction and pleasure (Wurmser, 1974). These oral needs and its relation with substance abuse were supported by anthropological and experimental studies claiming that the act of drinking and the use of alcohol aid people to deal with the conflict between dependence needs and societies' values on being independent (Bertrand & Masling, 1969). Moreover, it was found that people who had more positive oral fixation responses in the Rorschach Inkblot test were more likely to have alcohol dependency (Bornstein, Poynton, & Masling, 1985).

In Ego Psychology theories, weaknesses and deficits in ego are seen as risk factors for the development of alcohol dependency (Khantzian, 1977; Göka & Basterzi, 2001). These deficits were associated with incapacity to deal with painful emotions and tolerate them, which might lead to substance use as a coping mechanism and this can eventually result in addiction (Krystal & Raskin, 1970). In a more contemporary psychoanalytic approach, object relations theory, internalized objects, and an infant's relationship with them are the core of self (Bornstein, 1992). In early relationships, people may have unresolved conflicts that might re-appear in later life, and they may use substances for relief in current relationship, the relief they actually wish come from the internalized love object (Director, 2002). Moreover, substances may function as a love object, which is missing the internal lives of people with substance dependency. Therefore, whenever they do not use the substance, they may feel the absence their love object, which in turn may cause feelings of defenselessness (Pur, 2009).

According to Flores (2004), whose ideas are based on the attachment theory, addiction should be seen as a function of disruption of the attachment relationship and a reaction to being hurt. He believed that negative experiences in childhood interpersonal relationships affect the central nervous system, and are mirrored in adult life through dysfunctional and compulsive actions, such as addictions. Moreover, people with unhealthy relationship patterns develop dependency to psychoactive drugs as a replacement for human closeness (Flores, 2004). Because individuals with avoidant attachment are afraid of physical contact and have a tendency to avoid relationships, they turn to substances as a replacement for relationships (Flores, 2004). Furthermore, insecure attachment patterns are related with emotions regulation problems; thus, individuals with insecure attachment styles use substances as “self-medication” in order to relieve themselves from unbearable emotions and stress (Khantzian, 1997; Petraitis et al., 1998; Schindler & Bröning, 2015). Some individuals use substances to seek closeness, others use it as a strategy to distance from interpersonal relationships (Khantzian, 1997).

Both cross-sectional studies (Schindler et al., 2015; Iglesias et al., 2014), and longitudinal ones (Schindler, 2019) support the idea that attachment insecurity is a risk factor for substance abuse. Various studies related to attachment theory showed that insecurely attached individuals differ significantly from securely attached individuals in their consumption of alcohol and drugs (Isohanni, Moilanen & Rantakallio, 1991; De Rick & Vanheule, 2006; Thorberg & Lyvers, 2010). For

example, a study examining the connection between adult attachment and substance use found that insecure attachment characterized by abandonment anxiety was related with the frequency of substance use, which is assumed to function to decrease distress (Kassel, Wardle & Roberts, 2007). In a longitudinal study, it was found that adolescents with secure attachment at age 14 years were less likely to use substances at age 16 years (Branstetter et al., 2009). Another longitudinal study showed that insecure attachment between ages 10 and 12 was related with difficulties in emotion regulation at age 16 years, which in turn was associated with substance abuse at age 22 years (Zhai et al., 2014). Moreover, in a study conducted in Turkey, it was found that individuals who are securely attached are less likely to use substances (Görgün, Tirkayi & Topbaş, 2010).

In sum, many studies have proved that attachment security might have a protective role against developing substance use disorder while attachment insecurity could be a risk factor for substance abuse. The current study aims to explore the mediating role of mentalization between attachment patterns and alcohol abuse. Mentalization is one of the adaptive capacities that develop in a healthy attachment relationship (Fonagy, 2000), and lack of it has been associated with problematic alcohol use (Allen et al., 2008). Thus, it is critical to understand the role of mentalization in the relationship between attachment patterns and substance abuse. In the current study, it was argued that attachment insecurity has an impact on the development of mentalization, which in turn is associated with problematic alcohol use. Thus, in the next section, mentalization will be discussed.

1.3. Mentalization

1.3.1. Definition of Mentalization

Mentalization is defined as the ability to make sense of one's own emotions and the relational world by seeing oneself from outside and others from inside, meaning that looking at yourself through outside lens and understanding others through empathy (Fonagy, Gergely, Jurist, & Target, 2002). In other words, during mentalization process, we engage in a mental activity that allows us to perceive, predict and interpret our own intentional mental states such as feelings, beliefs, and desires as well as others' (Fonagy, 2006; Fonagy & Bateman 2006, 2007, 2008).

Although the term mentalization appeared in 1900s in Oxford English Dictionary, it was recognized in psychoanalytic literature in the late 1970s (Allen, Fonagy, & Bateman, 2008). It was first associated with autism, a disorder caused by neurobiological failure in mentalization (Morton, 1989). Then, Fonagy and his colleagues linked mentalization with other psychiatric disorders, e.g., borderline personality disorder, and developed treatment programs to improve mentalization capacity (Allen & Fonagy, 2006).

When one makes sense of others' actions, emotions and intentions, one can make one's own experiences meaningful (Fonagy, Gergely, Jurist, & Target, 2002). Once one is able to understand and interpret others and the self, one can regulate

affects and control impulses (Fonagy & Target, 1997).

1.3.2. Development of Mentalization

An attachment relationship is a necessary context for the development of mentalization (Fonagy, 2000). In this process, the mother takes the infant's particular experience, organizes it, and provides the infant the structured version of the experience which is the meaningful version. Thus, the caregiver provides meaning to the infant who is not able to make sense of the experience alone. Then, the infant internalizes these structured and reflected experiences forming internal working models, which will help the infant to develop the capacity for the understanding of his mind and other minds (Fonagy & Target, 1997). Therefore, the ability to mentalize, reflecting on thoughts and feelings, begins within the relationship with the primary caregiver (Fonagy & Target 1997).

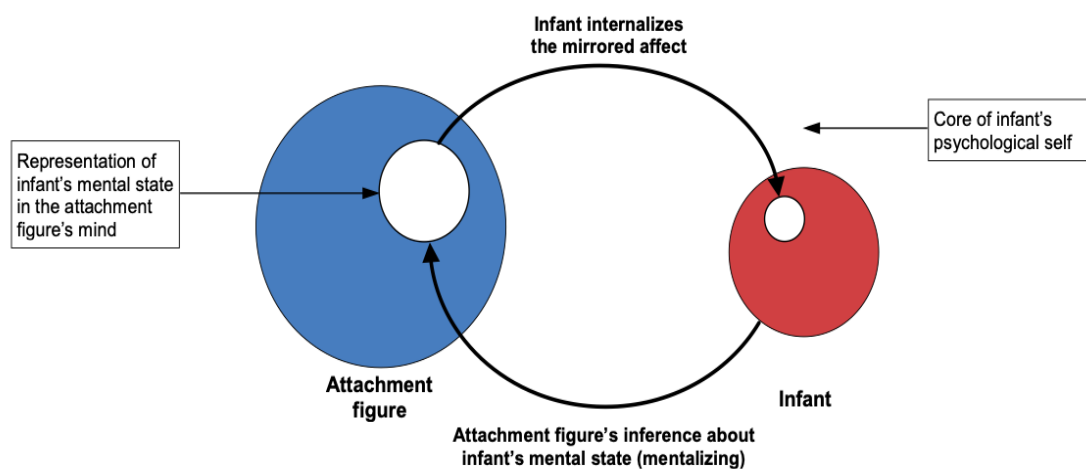


Figure 1.2. Development of the infant's "core self" (Fonagy and Luyten, 2018)

In the beginning of life, infants are not able to regulate emotions, and acquisition of the capacity to regulate affects depends on the caregivers' understanding and responses of instant changes happening in infants' emotional life (Fonagy, 2000). As shown in Figure 2, the development of the infant's sense of self and mentalization capacity depend on the mother's ability to reflect on the infant's internal world and to mirror the meaning she relays back to the child (Fonagy, Gergely, Jurist & Target, 2002; Slade, 2005; Gergely & Watson, 1996). This mirroring helps to construct "second-order representations," an ability to perceive another person who has purpose and thoughts; this process then helps forming the "core self" (Bateman and Fonagy, 2004). In other words, one develops a psychological self, through seeing his/her own perception of self in another's mind (Target and Fonagy 1996; Winnicott, 1960).

In the core self, infant has an understanding of his/her feelings based on the representation mirrored back to the baby by the caregiver. Furthermore, the caregiver conceptualizes the infant as a purposeful being, and provides this to the infant. Internalization of this intentional being who has agency generalizes to the representations of others and forms the basis for the development of mentalization capacity. These capacity helps the child to manage the complexities of their social world and regulate emotions emerging in interpersonal contexts (Bateman and Fonagy, 2004).

The caregiver thinks about the infant's experiences, in other words, contains the mental states of the infant, and then gives these back to the infant (Winnicott, 1971). In this process, mental representations given back to the infant should be bearable and manageable. The lack of this containment may cause the infant to fail to develop a sense of self in his/her mind (Fonagy and Target, 1997). Furthermore, when there is an empathic failure in the caregiver's representations, meaning that the caregiver fails mirroring the experience to the infant, the infant will have to internalize these representations of itself. These second-order representations are alien to the intentions of the infant and infants' real mental states (see Figure 3).

These alien second-order representations form some aspects of the inner self, which was called "alien self" (Bateman and Fonagy, 2004). The frequency and intensity of this situation may lead the infant's mind to be dominated by the alien self, which is related to constant self-hatred, inner criticism and sense of failure that are projected into others who can be perceived as attacking, harming and hostile. Yet, these internal torturing experiences may lead to attack on the self (e.g., self-harm, alcohol abuse) (Fonagy & Target, 2000).

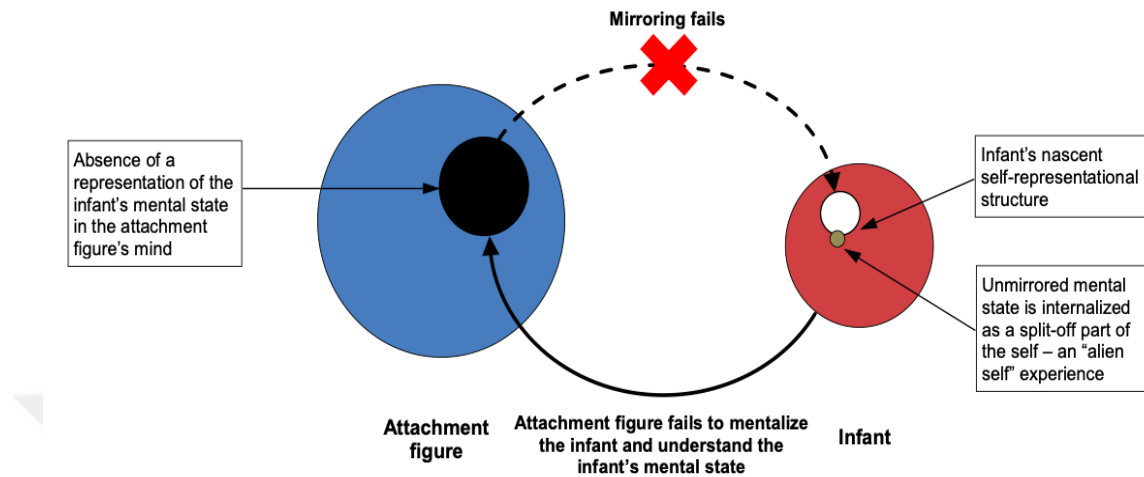


Figure 1.3. Formation of “alien self” (Fonagy and Luyten, 2018)

Developing mentalization capacity helps humans to make sense of the world and to predict actions, which make mentalization a resilience factor in relationships (Fonagy et al., 1994; Fonagy & Target, 1997). However, if the core self is controlled by the alien self, one’s prediction for others will be inaccurate as well, which causes him/her to feel that world is nonsense and unforeseeable. Therefore, by not making sense of what is happening and not being able to foresee what is going to happen, the alien-self interrupts the development of mentalization process.

1.3.3. Mentalization and Mental Health

Bateman and Fonagy (2011) suggested that high level of mentalizing supported during childhood by the caregivers increases the chance of generating second-order representations of self-state by the infant, which assures better emotion

regulation in interpersonal relationships. When the infant improves the ability to regulate emotions in social relationships, it contributes the infant to build a social environment that facilitates capacity of mentalizing. Eventually, the infant becomes resilient to the stressful social situations. This resilience helps the infant to protect him/herself against having psychological disorders later in his/her life (Bateman & Fonagy, 2011). For example, it was found that mentalizing serves as a protective factor against somatization, and lack of mentalizing is associated with somatic complaints (Ballespi et al., 2019). Another study showed that mentalizing is a protective factor against developing eating disorders (Rothschild-Yakar et al., 2013). A study conducted with adolescents argued that mentalization might be protective against outward expression of aggression in spite of having psychopathic traits (Taubner et al., 2013). In addition to mentalization's contribution to the resilience capacity against developing psychological disorders, it also promotes resilience against impacts of minority stresses that occur due to exposure to incidents of prejudice, and discrimination related to one's oppressed identity, e.g., rejection (Scandurra et al., 2020). A recent study showed that mentalization capacity is positively associated with well-being, and it buffers against stress (Schwarzer et al., 2021). Yet, it is also known that an increase in stress causes a decrease in the quality of mentalizing (Luyten & Fonagy, 2015; Luyten et al., 2012), and so, it could be argued that there is a limit for the protective role of mentalization.

On the contrary, impairments in mentalization, especially deficits in understanding oneself and others' minds, has a huge impact on the development of

various psychological disorders like borderline personality disorder (Sharp et al., 2008; Bateman & Fonagy, 2004), antisocial personality disorder (McGauley et al., 2011), and eating disorders (Kelton-Locke, 2016). For example, a study has shown the negative correlation between mentalization capacity and vulnerability to eating disorders (Cate et al., 2003). In this study, it was suggested that deficits in mentalization, e.g., inability to understand oneself and others' minds, leads individuals to express their feelings through actions instead of words, and hence can lead to dysfunctional eating behaviors. There are also studies showing that deficits in mentalization may cause emotional dysregulation, which in turn leads to substance abuse (Luyten et al., 2020; Innamorati et al., 2017; Imperatori et al., 2020). In sum, these findings prove that lack of mentalization is related with development psychological disorders, thus acting as a risk factor for mental health. Furthermore, healthy levels of mentalization may serve as a protective factor against them.

1.3.4. Mentalization, Attachment and Alcohol Abuse

Studies and clinical observations provide evidence for the relationship between alcohol abuse, attachment and mentalization (Allen et al., 2008). According to Flores (2004), addiction is an attachment disorder. Addiction provides self-soothing and self-regulation as well as helps reducing fear and anxiety, functions which are provided by attachment figures during childhood and sometimes in adulthood (Flores, 2004). Individuals with addiction problems avoid attachment needs by withdrawing into the grandiose self or false self; so, developmental needs

are met by addiction. The goal to repair the self-structure of individuals with addiction can be achieved by providing satisfactory interpersonal attachments in order to reconstruct attachment patterns and stabilize emotions at the necessary moments (Allen et al., 2008).

The connection between addiction and mentalization can be viewed as a two-way relationship (Allen et al., 2008). In one way, substance abuse interferes with mentalizing by clouding all types of thinking and feelings (Tobias et al., 2006). Furthermore, problems with mentalizing are related with difficulties in coping with interpersonal issues and extreme feelings. In other words, when an individual abuses substances, he/she will also lose the ability to differentiate outer and inner reality, in which thoughts and feelings are experienced without the certainty of the reality of them. This will complete and trigger the cycle happening in the relationship between low mentalization and substance abuse (Figure 4). Therefore, individuals with addiction who could not contain and regulate emotions are inclined to use substance in order to deal with these emotions and issues (Rössel, 2008).

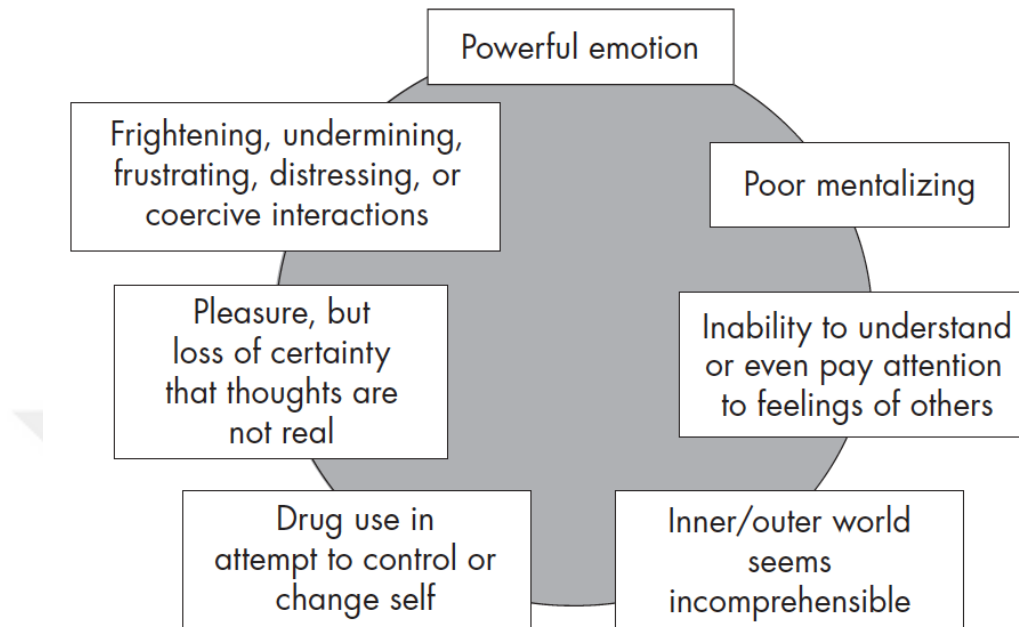


Figure 1.4. Malicious patterns of inhibition of mentalizing within drug addiction (Allen et al., 2008)

Although there are many studies about the relationship between attachment and mentalization, there are a few studies conducted that are examining the relationship between mentalization and addiction. For instance, in a study, it was found that individuals with alcohol dependence scored significantly lower in theory of mind tasks (Maurage et al., 2015). Another study showed that individuals with alcohol dependence had deficits in mentalizing about social conflicts (Schmidt et al., 2016). To the best of this author's knowledge, there are no other studies that examined this relationship. Furthermore, a glance at the literature reveals that studies examining the relationship between attachment, mentalization and addiction are very scarce. Notably, De Rick and colleagues (2009), found that individuals with alcohol

dependence are inclined to have high levels of alexithymia and avoidant attachment at the same time. Moreover, it was found that if these individuals with alcohol dependence had low levels of alexithymia, then they tended not to have avoidant attachment. In the light of this literature, there is a study conducted in Turkey examining the moderator role of mentalization on the link between attachment and alcohol/substance use (Sevinc, 2020). In the study, it was found that deficits in mentalization, e.g., the inability to differentiate mental states of self and others, have a moderator role on the link between attachment anxiety and alcohol use. In this moderation, high levels of uncertainty, meaning low levels of mentalization, increase the risk for harmful use of alcohol when attachment anxiety is also high. However, mentalization might also function as a mediator in the link between attachment and alcohol use, which will be examined in the present study. Although attachment has been found to be related with many psychological disorders including addictions, the primary problem could be the deficits in mentalization capacity.

1.4. The Present Study

The aim of the present study is to understand the role of mentalization capacity as a mediator in the link between attachment insecurity and alcohol abuse among college students. As mentioned in the literature part of the proposal, deficits in mentalization are associated with insecure attachment because insecurely attached individuals lack an environment to develop adaptive mentalization capacity. Furthermore, deficits in mentalization and alcohol abuse are related since in a non-mentalizing state of mind, one is not able to regulate emotions, especially when

distressed in interpersonal relationships, which may incite drinking. Therefore, substance abuse may be a solution to unbearable emotions and situations when an individual is not able to mentalize. Although the relationship between attachment and alcohol abuse are studied, and attachment insecurity was found to be a predictor of alcohol abuse, the role of mentalization as a mediator in this relationship has not been studied.

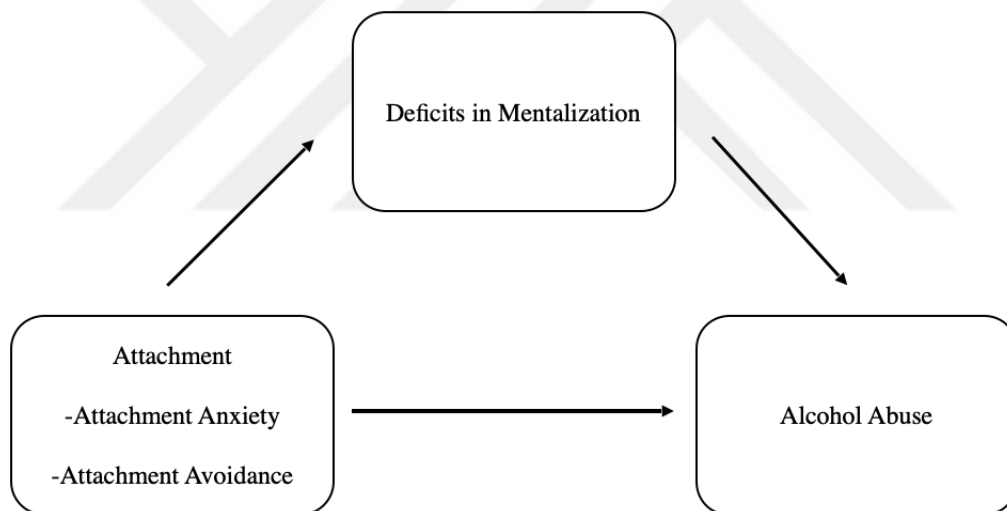


Figure 1.5. The Hypothesized Mediation Effect of Deficits in Mentalization

Shortly, this study aims to explore this relationship between mentalization, attachment, and substance abuse. It is expected that mentalization capacity will be inversely correlated with substance abuse, and positively associated with attachment security. Although attachment insecurity will be seen as a risk factor for alcohol abuse, mentalization will act as a mediator in this relationship (see Figure 5).

In the current study, two different scales were used to measure alcohol abuse and mentalization. For alcohol abuse, the author aimed to compare the results from two different scales: Alcohol Use Disorder Identification Test (AUDIT), and Addiction Profile Index Risk Screening-alcohol (APIRS-alcohol). AUDIT has more detailed questions, and aims to identify more severe cases, whereas APIRS-alcohol aims to detect risk for harmful use of alcohol. Therefore, it could be argued that AUDIT is more suitable for clinical populations in comparison with APIRS-alcohol. Yet, in the study, the author aimed to compare these two scales in a non-clinical sample. For mentalization, it was necessary to measure both “self” and “other” components of mentalization ability. For the “self” part, Mindful Attention Awareness Scale (MAAS) was used while Reading the Mind in The Eyes Test (RMET) was used for the “other” component of mentalization. The “self” part of mentalization capacity refers to the ability to comprehend one’s own actions, thoughts, intentions and emotions while the “other” part of the mentalization capacity is related with the ability to understand and make assumptions of other’s actions, thoughts, intentions and emotions (Fonagy & Bateman 2008). Since, there was no measure that evaluates both components of mentalization, two different measures assessing each component were utilized. Furthermore, Depression Anxiety Stress Scale (DASS) was used in order to examine the effects of depression, anxiety and stress as control variables to eliminate their effects and evaluate the unique contribution of independent variables on alcohol abuse in this study.

Within the scope of this study, the following hypotheses are specified:

1. Attachment insecurity will be positively correlated with problematic alcohol use.
 - a. Attachment anxiety will be positively correlated with problematic alcohol use.
 - b. Attachment avoidance will be positively correlated with problematic alcohol use.
2. Deficits in mentalization will be positively correlated with problematic alcohol use.
3. Attachment insecurity will be positively correlated with deficits in mentalization.
 - a. Attachment anxiety will be positively correlated with deficits in mentalization.
 - b. Attachment avoidance will be positively correlated with deficits in mentalization.
4. Mentalization will mediate the relationship between attachment insecurity and problematic alcohol use.

CHAPTER 2

METHOD

2.1. Participants

A total of 282 participants ($N = 282$) were recruited using snowball sampling. G*power analysis conducted before the study estimated the sample size to be 196 (effect size: 0.05, a err prob: 0.05, power: 0.80). 20 participants were excluded from the study because they did not meet the inclusion criteria for age. The mean age of the remaining participants ($N=262$) was 25.1 ($SD = 3.97$) ranging from 18 to 35 years. The aim of this age criteria was to examine study variables among young adults. Detailed information about participants' demographic features were presented in Table 2.1.

Table 2.1.

Demographic characteristics of participants

	<i>N</i>	%
Sex		
Female	187	71
Male	75	29
Educational Level		

Secondary School	1	.4
High School	7	3
Under Graduate Level	199	76
Graduate Level	52	20
Doctoral Level	3	1
University		
Public	126	48
Private	128	49
None	8	3
Employment Status		
Working	139	53
Not working	123	47
Relationship Status		
In a relationship	150	57
Single	80	31
Married	29	11
Divorced	3	1
Psychotherapy Experience		
None	151	58
0-3 months	50	19
3-6 months	17	6
More than 6 months	44	17
Still going	38	15
Stopped going	73	28
Diagnosis		
Depression	22	9
Anxiety Related	20	8
Comorbid	17	6
Other	11	4
No Diagnosis	192	73
Medication Use		
Using Medication	73	28
Not Using Medication	189	72
Substance Use		
Regular user	24	9
Tried once or twice	97	37
Did not try	141	54

Mother's Alcohol/Substance Use		
User	50	19
Non-user	209	80
Quitter	3	1
Father's Alcohol/Substance Use		
User	92	35
Non-user	142	54
Quitter	27	11

2.2. INSTRUMENTS

In this study, participants were asked to fill out a demographic form (See Appendix A) and six different measures. To measure alcohol abuse risk two scales were used; Alcohol Use Disorders Identification Test (AUDIT) (see Appendix B) and Addiction Profile Index Risk Screening (APIRS)-alcohol (see Appendix C). For mentalization measurement two scales were used; Reading the Mind in the Eyes Test (See Appendix D) and Mindful Attention Awareness Scale (See Appendix E). To find out attachment styles; Experiences in Close Relationships-Revised was used (See Appendix F). Participants also completed The Depression Anxiety Stress Scale (See Appendix G).

2.2.1. Demographic Form

For demographics, participants were asked their age, gender, education, and relationship status. After that, participants completed questions regarding their experience with psychological treatment, history of psychiatric diagnosis and medication. Finally, participants responded questions related to substance abuse. In

order to assess family history of alcohol or substance abuse, participants were asked questions about their parents' current use of alcohol and substances.

2.2.2. Alcohol Use Disorders Identification Test (AUDIT)

Alcohol Use Disorders Identification Test (AUDIT), originally developed by Babor and his colleagues (1989), is a self-report screening instrument including 10 questions to assess the severity of alcohol use. First eight questions offer 5 different responses with scores ranging from 0 to 4. The last two questions offer 3 alternative responses (scores from 0 to 2). In order to calculate the total score each answers' numeric values are summed yielding a total score ranging from 0 to 40. Scores between 8 and 15 indicate hazardous and harmful use while scores above 15 indicate high risk of alcohol dependence (Babor et al., 2001). The internal reliability score of the test was found to be between .80 and .94, and test-retest reliability was found to be as $r=.88$ (Babor et al., 2001).

Reliability and validity study of Turkish version of the scale was conducted by Saatçioğlu and her colleagues (Saatçioğlu et al., 2002). Item-to-total correlation was higher than .30, and test-retest reliability was .90. The correlation between AUDIT and Michigan Alcoholism Screening Test was in the acceptable range, ($r = 0.32$, $p < 0.05$) proving good convergent validity. Finally, in the current study, the internal consistency coefficient of AUDIT was found to be .80.

2.2.3. Addiction Profile Index Risk Screening (APIRS)-Alcohol

Addiction Profile Index Risk Screening (APIRS)-alcohol is a screening instrument to measure the severity of alcohol use (Ögel et al.,2017). APIRS consists of six questions, and responses are provided on a scale from 0 (Never or A few) to 2 (Frequently). The total score on the test is calculated by summing the numeric values of all items, and total score ranges from 0 to 12. On this screening instrument, total scores of 3 and higher are accepted as an indication of high risk of harmful alcohol use.

This scale was originally developed in Turkish, and despite low number of items on the scale, its psychometric properties are satisfactory. Internal consistency coefficient of APIRS-alcohol is 0.70. The scale was found to be significantly correlated with AUDIT ($r = 0.92$, $p < 0.01$). Finally, in the current study, the internal consistency coefficient of APIRS-alcohol was found to be .76.

2.2.4. The Mindful Attention Awareness Scale (MAAS)

The Mindful Attention Awareness Scale (MAAS) is a self-report instrument and utilized to measure the mindfulness which is described as “being attentive to and aware of what is taking place in the present” (Brown & Ryan, 2003, p.822). It was used to measure the “self” part of mentalization in the current study.

MAAS consists of 15 questions answered on a 6-point Likert scale ranging

from 1 (almost always) to 6 (almost never). In the scale, there is no reverse coding, and the total score is the sum of the numeric values of all responses. The higher final score is an indication of higher mindfulness capacity. The Cronbach alpha of the scale was 0.87, and test-retest reliability was found to be .81 (Brown & Ryan, 2003).

Results of the validity and reliability studies showed that the Turkish version of MAAS is a valid and reliable scale (Özyeşil et. al, 2011). The Turkish version has internal consistency of .80 and test-retest reliability of .86. For the criterion validity, the correlations between MAAS and Self Compassion, Depression, Anxiety and Stress Scale, and Positive and Negative Affect were calculated, and correlations were in the expected direction (Özyeşil et. al, 2011). Finally, in the current study, the internal consistency coefficient of MAAS was found to be .85.

2.2.5. Reading the Mind in the Eyes Test (RMET)

Reading the Mind in the Eyes Test (RMET) is a scale being used to measure the levels of recognition of emotions in other people. It was developed by Baron-Cohen and his colleagues (1997), and revised many times since then (Baron-Cohen & Jolliffe, 1997). It was used to measure the “other” part of mentalization in the current study.

The latest version consists of 37 black and white eye pictures (17 females, 19 males, 1 sample) reflecting various emotions and there are four emotion names under

each picture. Participants are asked to choose the most appropriate emotion for each eye picture. Each correct answer is a sign of higher emotion recognition, and higher scores are associated with higher ability to understand emotions from the eyes of others.

Turkish adaptation study was done by Yıldırım et al. (2011). In the study, 4 pictures were excluded for the Turkish version due to problems with internal consistency. Test-retest reliability was found to be .65 and alpha coefficient was .67 for the Turkish sample (Yıldırım et al., 2011). This scale has not been validated in a Turkish sample yet. Finally, in the current study, the internal consistency coefficient of RMET was found to be .49, indicating poor reliability for this scale.

2.2.6. Experiences in Close Relationships-Revised (ECR-R)

Experiences in Close Relationships-Revised (ECR-R) is a self-report measure concerning one's attachment security (Fraley et al., 2000). It has 36 questions, half related to anxious attachment, and the other half is about avoidant attachment answered on a 7-point Likert scale, from 1 (*Never Agree*) to 7 (*Always Agree*). The total score for each attachment style is calculated by summing relevant items. There are fourteen reverse coded questions (4, 8, 16, 17, 18, 20, 21, 22, 24, 26, 30, 32, 34, 36) in the scale. Higher scores refer to higher insecurity for each subscale. In other words, higher score on the subscale of anxious attachment means higher anxiety, and higher score on the subscale of avoidance means higher avoidance. Reliabilities of

both subscales was found to be as .81.

Turkish reliability and validity study showed that ECR-R have high internal consistency for avoidant and anxious attachment types as .90 and .86, respectively (Selçuk et al., 2005). Test-retest reliability for anxiety subscale was .82, whereas it was .81 for avoidance subscale. Both subscales, attachment anxiety and attachment avoidance, were negatively correlated with Relationship Happiness Scale (RHS) ($r = -.23, p < .05$; $r = -.49, p < .01$, respectively) and Rosenberg Self-Esteem Inventory ($r = -.32, p < .01$; $r = -.19, p < .01$, respectively). Finally, in the current study, the internal consistency coefficient of ECR-R was found to be .91 for both subscales.

2.2.7. The Depression Anxiety Stress Scale (DASS)

The Depression Anxiety Stress Scale (DASS) is a 42-item, single, self-report measure of anxiety, depression and stress within the last week, developed by Lovibond and Lovibond (1995). Each subscale consists of 14 items, and sum of the numeric values of the responses gives the final score for each subscale. Higher scores mean higher level of what each subscale supposed to measure. Average range is 0-9, 0-7, and 0-14 for depression, anxiety, and stress, respectively. Scores higher than these are considered above average depression, anxiety or stress levels. The reliability of the subscales of anxiety, depression and stress were .91, .84, and .90, respectively.

Turkish version of the scale demonstrated good reliability and validity (Bilgel & Bayram, 2010). It has internal consistency of .92, .86, and .88 for depression, anxiety and stress, respectively, while in the current study it had internal consistency of .96, .96, and .93 for depression, anxiety and stress, respectively.

2.3. Procedure

First of all, ethics approval was obtained from Bahçeşehir University Ethical Committee before conducting this study. All the data was collected via an online survey software (www.qualtrics.com). The online survey was distributed through social media. First, in order to ask for a voluntary participation, the participants were given an Informed Consent Form (see Appendix H) in which the purpose of the study, information regarding confidentiality, voluntary nature of participation and the right to withdraw were explained. Participants were also provided with contact information of the researcher and his thesis advisor in case they have any questions or concerns about the study. Subsequent to their approval for a voluntary participation, The Demographic Information Form, Alcohol Use Disorders Identification Test (AUDIT), Reading the Mind in the Eyes Test (RMET), Experiences in Close Relationships-Revised (ECR-R), Addiction Profile Index Risk Screening (APIRS)-alcohol, The Mindful Attention Awareness Scale (MAAS), and The Depression Anxiety Stress Scale (DASS) were presented to all participants in a fixed order. It took approximately 25 minutes to complete all scales. Participants needed to complete all questions in order to go through the scales. Participants did not receive any compensation for their participation in this study.

CHAPTER 3

RESULTS

In this section, the findings of the current study will be presented. 30 participants, who scored “0” for AUDIT, were excluded from the analyses because hypotheses aimed to examine alcohol abuse, and these participants who are abstainers were not thought to be the subject of the analyses. According to normality analyses, there were positive skewness and kurtosis for AUDIT scores. Therefore, logarithmic transformation was performed. On the other hand, the other alcohol scale APIRS-alcohol’s skewness and kurtosis results were in the acceptable range (-2, +2), so transformation was not needed (George & Mallery, 2010).

This section will initially present the reliability analyses and descriptive statistics of the scales. Then, descriptive and background statistics of alcohol use will be given. Afterwards, Pearson Correlations among alcohol use, attachment avoidance, attachment anxiety and mentalization will be presented. Finally, hierarchical regression analysis will be reported in order to show the mediator role of mentalization on the link between attachment and alcohol use.

3.1. Descriptive Statistics

The predictor variable of the study was attachment insecurity, which is operationalized as attachment avoidance and attachment anxiety, measured by Experiences in Close Relationships-Revised (ECR-R). The dependent variable of the study was alcohol use measured by Alcohol Use Disorder Identification Test (AUDIT), and Addiction Profile Index Risk Screening (APIRS)-alcohol. The mediator of the study was mentalization, which is operationalized as mindfulness measured by Mindful Attention Awareness Scale (MAAS) and theory of mind measured by Reading the Eyes in the Mind Test (RMET).

As preliminary analyses, reliability analyses were conducted in order to check internal consistencies. Following this, scale scores were computed, and descriptive statistics were examined and presented.

3.1.1. Reliability Analyses and Descriptive Statistics of the Scales

Internal consistencies were checked with reliability analyses before the data analyses. According to internal consistency analyses, all scales and sub-scales had high reliability ranging from .76 to .96 except RMET which yielded a low reliability ($\alpha = .49$).

The means, standard deviations, and minimum and maximum scores for each scale were presented in Table 3.1.

Table 3.1.*Descriptive Statistics for All Scales*

	<i>Mean</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
AUDIT ¹	6.45	4.73	1	26
APIRS-Alcohol ²	2.37	2.23	0	11
MAAS ³	55.85	13.39	19	84
RMET ⁴	23.95	3.21	8	31
ECR-R ⁵				
Attachment Avoidance	2.91	1.07	1	5.67
Attachment Anxiety	3.65	1.15	1.11	6.39
DASS ⁶				
Depression	13.73	11.75	0	42
Anxiety	9.7	9.02	0	37
Stress	16.83	10.39	0	41

¹Alcohol Use Disorder Identification Test²Addiction Profile Index Risk Screening-Alcohol³The Mindful Attention Awareness Scale⁴Reading the Mind in the Eyes Test⁵Experiences in Close Relationships-Revised⁶Depression Anxiety Stress Scale**3.1.2. Descriptive Statistics and Background Characteristics of Alcohol Use**

In order to present a picture of the distribution of alcohol use in this sample, assessed by APIRS-alcohol and AUDIT, participants were categorized into low- and high-risk groups, however, scores from these measures were used as a continuous variable in data analyses. Regarding frequencies of alcohol use in the sample based on APIRS-alcohol scores, total of 230 participants reported that they use alcohol. Among them, 69% (N = 159) of them were female, and 31% (N = 71) of them were male. According to cut-off point specified for APIRS-Alcohol, 40% (N= 91) of the total participants had a risk for harmful drinking. Detailed information of those responses was presented in Table 3.3. Participants were separated into two groups, low risk and high risk, based on the cut-off points in the APIRS-alcohol manual. Low risk group scored between 0-2, while high risk group scored 3 and above.

Table 3.2.

Frequencies of Alcohol Use (APIRS-alcohol)

		Low Risk Group		High Risk Group	
		<i>N</i>	%	<i>N</i>	%
Total		139	60	91	40
Sex					
	Female	102	73	57	63
	Male	37	27	34	37
Age					
	18-26	103	74	74	81
	27-35	36	26	17	19
University					
	Public	73	52	36	40
	Private	68	48	53	60

Employment Status				
Working	77	55	48	53
Not Working	62	45	43	47
Relationship Status				
In a relationship	45	32	34	37
Single	78	56	52	57
Married	13	9	5	5
Divorced	3	2	0	0

On the other hand, according to cut-off points specified for AUDIT, 29% (N= 67) of the total participants had a risk for harmful drinking. Detailed information of those responses was presented in Table 3.4. Participants were separated into two groups, low risk and high risk, based on the cut-off points in the APIRS-alcohol manual. Low risk group is identified by scores between 0-7 while high risk group were identified by scores 9 and above.

Table 3.3.

Frequencies of Alcohol Use (AUDIT)

		Low Risk Group		High Risk Group	
		<i>N</i>	%	<i>N</i>	%
Total		163	71	67	29
Sex					
	Female	109	67	50	75
	Male	54	33	17	25
Age					
	18-26	124	76	53	79
	27-35	39	24	14	21
University					
	Public	79	49	30	45

Private	84	51	37	55
Employment Status				
Working	88	54	37	55
Not Working	75	46	30	45
Relationship Status				
In a relationship	59	36	20	30
Single	89	54	41	61
Married	14	9	4	6
Divorced	1	1	2	3

To identify the associations between alcohol use and demographic variables, mean comparisons were conducted. The means for the categories of gender, educational level, relationship status, employment, psychological treatment, diagnosis, medication, drug use of participants, and alcohol/drug use of participants' mothers and fathers were compared. Independent Samples t-test was used for the variables with two categories while One-way Analyses of Variance Analyses (ANOVA) were conducted for the other variables that have more than two categories. Furthermore, to assess the link between the risk of harmful alcohol use and age, Pearson correlation analysis was used.

First of all, regarding gender, an independent t-test analysis conducted with AUDIT scores and APIRS-alcohol, and there was no significant difference found between male and female participants in regards to their risk for harmful drinking, $t(228) = 1.169, p = .224$, and $t(228) = .966, p = .335$, respectively. Furthermore, there was no significant correlation between AUDIT scores or APIRS-alcohol scores and age, $r(230) = -.046, p = .491$, and $r(230) = -.016, p = .804$, respectively. In other

words, the risk for harmful alcohol use does not differ across ages in this sample since this is a restricted range of population in terms of age range.

Regarding education level, there was no significant difference between participants who had different education levels (e.g., undergrad degree or lower education and master's or doctorate degree) on either alcohol scales, namely AUDIT and APIRS-alcohol, $t(228) = -.544, p = .587$, and, $t(228) = -.354, p = .724$, respectively. Furthermore, regarding employment status, there was no significant difference between participants who are currently working and participants who are not working on either alcohol scales, AUDIT and APIRS-alcohol, $t(228) = -.481, p = .631$, and $t(228) = -.317, p = .751$, respectively.

Regarding relationship status, there was no significant difference on AUDIT or APIRS-alcohol between single, married, divorced participants or those in a relationship, $F(3, 226) = 1.806, p = .147$, and $F(3, 226) = .927, p = .429$, respectively.

Regarding having psychotherapy, there was a significant difference on AUDIT scores between the participants in terms of treatment history (categorized as none, 0-3 months, 3-6 months, and more than 6 months), $F(3, 226) = 2.978, p = .032$. According to Tukey's post hoc test, participants who were not in psychotherapy scored significantly lower on harmful alcohol use scale ($M = .66, SD = .32$) than participants who received psychotherapy between 3-6 months ($M = .89, SD = .30$).

However, the relationship between APIRS-alcohol scores and treatment history was nonsignificant, $F(3, 226) = 1.488, p = .219$.

Regarding diagnosis, there was a significant difference on AUDIT scale between participants who were diagnosed and participants who were not diagnosed, $t(228) = -3.436, p < .001$. That is participants who received a diagnosis scored higher on AUDIT ($M = .82, SD = .35$) than participants who did not have a diagnosis ($M = .65, SD = .31$). Furthermore, there was a significant difference on APIRS-alcohol scale between participants who received a psychiatric diagnosis and participants who did not $t(88) = -2.642, p = .01$. In other words, participants who received a diagnosis showed higher risk for harmful alcohol use ($M = 3.08, SD = 2.67$) than participants who did not have a diagnosis ($M = 2.10, SD = 1.99$).

Regarding medication, there was also a significant difference on AUDIT scale between participants who used medication and participants and who did not use medication $t(228) = -4.060, p < .000$, that participants who used medication showed higher risk for harmful alcohol use ($M = .81, SD = .36$) than participants who did not use medication ($M = .64, SD = .30$). Furthermore, there was also a significant difference on APIRS-alcohol scale between participants who used medication and participants who did not use medication $t(121) = -2.724, p = .007$, that participants who used medication showed higher risk for harmful alcohol use ($M = 2.97, SD = 2.55$) than participants who did not use medication ($M = 2.06, SD = 1.99$).

Regarding the drug use of participants, there was a significant difference on AUDIT scale between participants who did not use drug, who used drug once or twice, and who used drugs frequently $F(3, 226) = 20.402, p = .000$. According to Tukey's post hoc test, participants who did not use drugs scored significantly lower on harmful alcohol use scale ($M = .56, SD = .32$) than both participants who used drug once or twice ($M = .81, SD = .28$), and who uses drugs frequently ($M = .84, SD = .30$). Furthermore, there was also a significant difference on APIRS-alcohol scale between participants who did not use drugs, who used drugs once or twice, and who used drugs frequently $F(3, 226) = 19.109, p = .000$. According to Tukey's post hoc test, participants who did not use drugs scored significantly lower on harmful alcohol use scale ($M = 1.49, SD = 1.47$) than both participants who used drug once or twice ($M = 3.07, SD = 2.47$), and who uses drugs frequently ($M = 3.50, SD = 2.57$).

Lastly, regarding participants' mothers' use of drug/alcohol, there was no significant difference on AUDIT scale between participants whose mothers use drug/alcohol and participants whose mothers do not use drug/alcohol $t(228) = -1.256, p = .210$. Also, there was no significant difference on APIRS-alcohol scale between participants whose mothers use drug/alcohol and participants whose mothers do not use drug/alcohol $t(228) = -.914, p = .362$. Furthermore, regarding participants' fathers' use of drug/alcohol, there was no significant difference on AUDIT scale between participants whose fathers use drug/alcohol and participants whose fathers do not use drug/alcohol $t(228) = -1.869, p = .063$. Also, there was no significant difference on APIRS-alcohol scale between participants whose fathers use

drug/alcohol and participants whose fathers do not use drug/alcohol $t(228) = -1.309$, $p = .192$.

Table 3.4.

Significance Levels for All Demographics

	AUDIT	APIRS-Alcohol
Gender		
Educational Level		
Relationship Status		
Employment Status		
Having Psychotherapy	*	
Diagnosis	**	**
Medication	**	**
Drug Use	**	**
Mother's Use of Drug/Alcohol		
Father's Use of Drug/Alcohol		

*. Correlation is significant at the 0.05 level (2-tailed).

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

3.2. The Relationship Between Attachment, Mentalization, and Alcohol Use

3.2.1. Correlations Among Variables

Pearson correlations were conducted in order to assess the strength and direction of the relationship between alcohol use with attachment insecurity and mentalization capacity (see Table 3.6). Alcohol abuse was found to be significantly correlated with attachment avoidance, anxiety, and stress when APIRS-alcohol scale

was used. After the transformation of AUDIT scores, there was no significant correlation between any other variable. Thus, the analyses were continued with APIRS-alcohol scale's scores.



Table 3.5.*Pearson Correlations among outcomes of scales (N = 230)*

	AUDIT	APIRS- Alcohol	Attachment Anxiety	Attachment Avoidance	RMET	MAAS	Depression	Anxiety
APIRS-Alcohol	.743**							
Attachment Anxiety	.065	.083						
Attachment Avoidance	.066	.154*	.423**					
RMET	-.004	.034	-.014	-.126				
MAAS	-.004	-.023	-.135*	-.138*	-.006			
Depression	.076	.115	.391**	.317**	-.009	-.224**		
Anxiety	.103	.135*	.404**	.282**	-.078	-.249**	.750**	
Stress	.105	.153*	.444**	.262**	.045	-.188**	.768**	.804**

*.Correlation is significant at the 0.05 level (2-tailed).

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

3.2.2. Results for Hypotheses

In the first hypothesis of the current study, it was expected that attachment insecurity will be positively correlated with alcohol use. Since the attachment insecurity has two different dimensions, correlations of these dimensions with alcohol use were examined separately. According to analyses, the correlation between attachment avoidance and alcohol use was found to be significant for APIRS-Alcohol, $r(230) = .154, p < .05$ although it was not significant for AUDIT. Furthermore, there was no significant correlation between alcohol use and attachment anxiety. Therefore, the hypothesis 1.b. was confirmed although the hypothesis 1.a. was not confirmed.

In the second hypothesis of the current study, it was expected that deficits in mentalization will be positively correlated with alcohol use. However, there was no significant relationship between either alcohol use scales, AUDIT or APIRS-Alcohol, or mentalization scales, RMET or MAAS. Therefore, the hypothesis 2 was not supported.

Lastly, in the third hypothesis of the current study, attachment insecurity was expected to be positively correlated with deficits in mentalization. There was no significant relationship between attachment insecurity and mentalization based on RMET scores. However, there was a significant relationship between attachment anxiety and mentalization based on MAAS scores, $r(230) = -.135, p = .039$.

Therefore, the hypothesis 3.a. was supported. Furthermore, there was a significant relationship between attachment avoidance and mentalization based on MAAS scores, $r(230) = -.138, p = .036$. So, the hypothesis 3.b. was supported.

3.3. The Mediator Role of Mentalization

The fourth hypothesis referred to the mediator role of mentalization on the relationship between attachment insecurity and alcohol use. Since the link between mentalization and alcohol was not significant, there is no ground for mediation analysis for attachment insecurity and alcohol. Therefore, the hypothesis 4 was not supported.

3.3.1. Post-hoc Analyses

A hierarchical regression analysis for variables which are significantly predicting alcohol use: drug use, medication, diagnosis, anxiety, and attachment avoidance was conducted as a post-hoc analysis. The model summary of the analysis is presented in Table 3.7. The final model explains approximately 19% of the variance in risk for harmful alcohol use by using APIRS-alcohol scale.

As step one of the analysis, demographic variables that are significantly correlated with alcohol use were entered, which explained approximately 15% of the variance in risk for harmful alcohol use, and they were found to be strongest predictors in the analysis, $R^2_{change} = .148, F_{change}(3, 226) = 13.050, p < .001$ In the

second step, anxiety was entered the analysis, which explained approximately 2 % of the variance in risk for harmful alcohol use, $R^2_{change} = .018$, $F_{change}(1, 225) = 4.724$, $p < .001$. In the last step, attachment avoidance was entered the analysis, which explained approximately 2 % of the variance in risk for harmful alcohol use, $R^2_{change} = .021$, $F_{change}(1, 224) = 5.889$, $p < .001$.

Table 3.6.

The Model Summary of Hierarchical Regression Analysis for Alcohol Use^d

Model	R	R ²	Adj. R ²	SE of the Estimate	R ² Change	df1	df2
1	.384 ^a	.148	.136	2.069	.148	3	226
2	.406 ^b	.165	.150	2.052	.018	1	225
3	.432 ^c	.187	.168	2.030	.021	1	224
a	<i>Predictors: (Constant), Drug Use, Medication, Diagnosis</i>						
b	<i>Predictors: (Constant), Drug Use, Medication, Diagnosis, Anxiety</i>						
c	<i>Predictors: (Constant), Drug Use, Medication, Diagnosis, Anxiety, Attachment Avoidance</i>						
d	<i>Dependent Variable: Alcohol Use</i>						

Furthermore, the regression coefficients and the standard beta values were presented in Table 3.8. Results showed that drug use, and attachment avoidance were stronger predictors of the risk for harmful alcohol use. The further inspection of the model suggests that one unit of increase in drug use leads to an increase of 1.2, and attachment avoidance leads to an increase of .32 in the risk of harmful alcohol use.

Table 3.7.

Results of the Hierarchical Regression Analysis for Variables Predicting Alcohol Use

	<u>Unstandardized</u>		<u>Standardized</u>		Sig.
	<u>Coefficients</u>		<u>Coefficients</u>		
	B	B SE	Beta	T	
(Constant)	.297	.426		.697	.487
Drug Use	1.201	.209	.359	5.750	.000
Medication	.298	.426	.063	.700	.485
Diagnosis	.205	.458	.041	.447	.655
Anxiety	.023	.016	.094	1.461	.145
Attachment	.321	.132	.154	2.427	.016
Avoidance					

CHAPTER 4

DISCUSSION

Attachment insecurity is suggested to be one of the predictors of alcohol abuse (Zakhoul et al., 2020). It is also known that deficits in mentalization, which develops within attachment relationship, are related to alcohol abuse (Allen et al., 2008). However, the literature is scarce where it comes to studying the role of mentalization in the relationship between attachment and substance use. Therefore, this study aimed to examine the relationship between these three variables, and the mediator role of mentalization between attachment insecurity and problematic alcohol use in order to understand the risk factors behind alcohol abuse.

Consequently, four main research questions were explored: (1) whether attachment insecurity was predictive of problematic alcohol use; (2) whether attachment insecurity was related to high levels of deficits in mentalization; (3) whether high levels of deficits in mentalization was predictive of problematic alcohol use; and (4) whether the relationship between attachment insecurity and alcohol use was better explained when deficits in mentalization were examined.

The results showed that the scores of AUDIT were not normally distributed while the scores of APIRS-alcohol were normally distributed. After the normality transformation was conducted for AUDIT scores, APIRS-alcohol and AUDIT scores showed different relationships with study variables. For instance, whereas, higher scores on APIRS-alcohol were associated with both anxious and avoidant attachment, there was no relationship between AUDIT scores and attachment patterns. This could be explained by the finding that, there were more participants classified as high-risk for harmful use of alcohol when APIRS-alcohol was used. Moreover, the number of participants in the high-risk group was higher for male participants than female participants, which changed the gender distribution of alcohol use for the scales. This may indicate that these scales are measuring different components or severity level of alcohol use. When a visual content analysis of the scales was conducted, it was observed that whereas AUDIT contains more detailed questions aiming to detect more severe alcohol use, including dependence, APIRS-alcohol is exploring the risk level of problematic alcohol intake. There are more items on AUDIT that address severe alcohol use and consequences of problematic alcohol consumption. On the other hand, APIRS-alcohol has fewer questions that aim to assess the amount of alcohol consumption to identify risky use. This finding needs to be considered for future research; in order to study more severe use of alcohol researchers may prefer to utilize AUDIT. Since the sample of the current study did not include enough individuals with severe alcohol abuse and/or dependence, scores from the AUDIT were not normally distributed. Another reason behind this difference might be that there are questions related to harmful

consequences of alcohol abuse like “Have you or someone else been injured as a result of your drinking?” or “During the past year, how often have you found that you were not able to stop drinking once you had started?” in AUDIT. People might have scored low in these items as a function of the changes in drinking behavior during the pandemic. As a result of the global Covid-19 pandemic since the beginning of 2020, many governments implemented curfew or lock-downs that restrict people’s socialization behavior. These measures during the pandemic might have altered the life style of individuals, e.g., reducing overall alcohol consumption. Furthermore, if someone is drinking, they are not able to drink in a social context, most probably drinking at home, so the risk of injuring oneself or someone else decreased dramatically. These differences between these seemingly very similar screening instruments for alcohol use need to be considered for researchers depending on the purpose of their studies.

4.1. Discussion of the Findings

4.1.1. Alcohol Use and Background Characteristics

In the current study, the mean comparison tests and correlation analyses were conducted in order to understand the relationship between alcohol use and demographic characteristics of the sample. In this section, the findings of these analyses will be discussed.

First, there was a significant relationship between diagnosis and alcohol abuse, that is participants who are diagnosed with other mental disorders consume more alcohol than participants who are not diagnosed. It is known that in the clinical practice, patients with alcohol problems often have other psychiatric disorders that co-exist with, contribute to, or result from alcohol abuse (Castillo-Carniglia et al., 2019). Alcohol abuse tends to be comorbid with anxiety disorders, mood disorders, personality disorders and major depressive disorders (Grant et al., 2015). Reasons behind the high ratio of comorbidity of alcohol use problems and other mental disorders may be two folds. Alcohol abuse might be a way of self-medication against the symptoms caused by mental disorder; and/or alcohol abuse may be a risk factor to develop other mental disorders (Flores, 2004). Second, there was a significant relationship between psychiatric medication use and alcohol abuse. Participants on medications are more likely to abuse alcohol than participants who do not use medications. This finding is consistent with the finding that participants with comorbid conditions reported higher alcohol use. That is participants who had a psychiatric diagnosis might have been on medication, but this author did not analyze this relationship to confirm this assumption.

According to findings, drug use and alcohol abuse were found to be significantly associated. Participants who use drugs frequently and who tried drugs once or twice consume more alcohol than participants who do not use drugs. Co-occurrence of alcohol abuse and drug abuse is not uncommon, and it is called “dual-dependence.”, e.g., 1.1% of US population have dual-dependence (Stinson et al., 2005). In general, people who abuse alcohol are more likely to abuse drugs than

people who do not abuse alcohol, and similarly, people who abuse drugs tend to consume alcohol more than people who do not abuse drugs (Arias & Kranzler, 2008). One of the main reasons behind this dual-dependence is that similar factors underlie both alcohol and drug abuse (Kalin, 2020). For example, the “pleasure pathway” plays a significant role (Connor et al., 2016), in which reinforcement and reward mechanisms are boosted that impacts both drug and alcohol abuse (Kalin, 2020). The personality factor most likely associated with substance abuse is impulsivity; that is more impulsive people tend to use alcohol and drugs more than others with low impulsivity (De-Sola et al., 2017). Also, similar socio-cultural factors have impact on both drug and alcohol abuse. One such risk factor has been identified as immigration and related stressors; difficulties and hardship caused by immigration have been found to be associated with drug and alcohol abuse (Unger et al., 2014; Bui 2012; Lee et al., 2013).

4.1.2. The Relationships Among Alcohol Use, Attachment, and Mentalization

The first hypothesis of the current study aimed to assess whether attachment insecurity, attachment anxiety and attachment avoidance, is related to alcohol abuse. This hypothesis was partially supported by the results of this study, that attachment avoidance and alcohol abuse were significantly associated whereas attachment anxiety and alcohol abuse were not significantly related.

According to adult attachment theory, individuals with higher levels of anxiety are categorized into individuals with preoccupied and fearful attachment styles. Although people with preoccupied attachment style have lower levels of avoidance, individuals who exhibit fearful attachment are high on both avoidance and anxiety. Since they are anxious about close relationships, they have problems with establishing and maintaining intimacy (Barthemelow, 1990). This interpersonal difficulty may be associated with emotion regulation problems and hence extreme experience of emotions leading them to drink (Flores, 2004). Here, the harmful use of alcohol might be an unhealthy emotion regulation strategy like binge eating. Along with the idea that having problems with emotion regulation lead to alcohol consumption, alcohol intoxication impairs emotion regulation capacity, which is a higher order process, as well (Curtin & Fairchild, 2003). Moreover, individuals with addictions use substances in order to meet the attachment needs of their interpersonal relationships (Flores, 2004). However, findings from the current study do not support this argument, which could be due to pandemic circumstances and its outcomes. During the pandemic, anxiously attached people, who are concerned with physical and psychological proximity to their partners, might have been at least physically together with their partner more than other times. In other words, their significant others might have been more available to them when they felt fear and anxiety, and needed comforting. In the past this function might have been self-provided by consuming alcohol for affect regulation (Flores, 2004). Therefore, the need to substitute these needs with alcohol, and consume alcohol due to the fear of abandonment might have been reduced during this period.

On the other hand, higher levels of avoidance are usually associated with an outward expression of sense of autonomy, and low levels of intimacy and emotional disclosure (Barthemelow, 1990). The attempts to avoid problems within interpersonal relationships distance individuals with avoidant attachment from intimacy, and create a sense of autonomy. Yet, it is an illusion that they are self-sufficient to deal with all negative emotions since they do not seek and benefit help from others in case of emotional crises (Lynch, 2013). Therefore, it was argued that avoidantly attached people are inclined to use alcohol in order to avoid attachment needs, negative emotions, and loneliness (Schindler, 2019). The findings from the current study are consistent with previous studies that showed that participants with avoidant attachment have significantly higher scores on alcohol abuse as opposed to other participants.

The second hypothesis of the current study suggested that deficits in mentalization are associated with alcohol use. However, this hypothesis was not supported by the findings, that is there was no significant relationship between deficits in mentalization and alcohol abuse. Two different mentalization scales were used in this study. RMET showed low reliability in this sample. As a result, one component of mentalization, other oriented mentalization, could not be evaluated. Regarding the results of the other mentalization scale, MAAS, there could be several reasons why there was no significant relationship between deficits in mentalization and alcohol abuse. MAAS measures only “self” part of mentalization, which

evaluates the inner experiences. However, alcohol abuse might be more related with interpersonal difficulties; thus, MAAS could not possibly assess this component of mentalization. Furthermore, alcohol consumption in a social context was almost impossible for a while due to the pandemic. Individuals having problems with interpersonal relationships might have a tendency to go out, and drink in order to solve their problems, which was not an option during the pandemic. So, the lack of this relationship could be explained by low levels of alcohol consumption during this period. It is possible that the results from this study did not reflect the real alcohol use problems in this sample. Another explanation was that, alcohol consumption in the general non-clinical population, such as the current sample, does not reach to problematic levels.

The third hypothesis of the current study predicted that attachment insecurity was associated with deficits in mentalization. The results supported this hypothesis; in other words, both attachment anxiety and attachment avoidance were associated with deficits in mentalization. This finding is consistent with the current literature (Cate et al., 2013; Kuipers et al., 2016). For instance, in a recent study, impairments in mentalization were positively associated with attachment insecurity in adulthood (Hayden et al., 2019). Another recent study suggested that secure attachment is positively related with higher levels of mentalization (Tanzilli et al., 2021). Also, there were studies examining individuals who undergo therapy, who have problems creating strong therapeutic alliances. These studies suggested that having poor mentalization is an adverse impact of attachment insecurity (e.g., Muran et al., 1994;

Mallinckrodt, 1991). In sum, it is argued that attachment context is vital for the development of mentalization, and problems within this context may lead to mentalization impairments (Bo et al., 2017; Mikulincer & Shaver, 2018), which findings of the current study support.

Finally, the fourth hypothesis of the current study expected that deficits in mentalization mediate the relationship between attachment insecurity and alcohol abuse. There were various studies investigating the association between attachment insecurity and alcohol abuse as well as the connection between mentalization and attachment insecurity. However, there is a gap in the literature for studies evaluating the mediator factors between attachment and alcohol use, e.g., mentalization. To the best of this author's knowledge, there was only one study which examined the relationships between these three variables (Sevinc, 2020), yet it treated mentalization as a moderator variable. The current study conceptualized the role of mentalization as a mediator in the relationship between attachment insecurity and alcohol abuse. On the contrary to the Sevinc's work, deficits in mentalization were not related with alcohol abuse in the current study. Therefore, mediation analysis could not be conducted. In Sevinc's study, there were 398 participants, and the distribution of male and female participants were equal. Since it is known that males tend to abuse alcohol more than females (Wilsnack et al., 2009), smaller number of male participants in the current study could have influenced the distribution of alcohol scales' scores as well as significance of the association between variables and alcohol abuse.

Although the last hypothesis could not be tested, a model consisting of study variables, which were significantly associated with alcohol abuse, was conducted in order to explore the variance explained by different variables in the model. In the first model, only demographic variables were entered, and it was observed that drug use explained most of the variance. Then, anxiety level was entered to the model, and it was found that anxiety level had the smallest influence on the risk for harmful use of alcohol. Lastly, attachment avoidance was added to the model, which had slightly higher explanation of the model in comparison with anxiety level.

4.2. Limitations and Further Recommendations

First limitation of the current study was the use of self-report measures, which are vulnerable to desirability, memory and self-serving biases. Especially, reporting alcohol use could make participants to face with the reality of the severity of their cases, so this could have influenced the results as well. Furthermore, participants might have under-rated their alcohol use due to negative social stigma associated with excessive use. Therefore, future studies might include social desirability scale in order to measure individuals' tendency to report their alcohol consumption in a biased way.

Second limitation of the current study was male-female distribution among participants. Most participants (71%) in the current study were female. It is well known that males tend to consume more alcohol than females. For example, a recent

study conducted in Turkey showed that men are almost 5 times more likely to engage in heavy and prolonged use of alcohol than women (Ulas et al., 2017). This uneven distribution of male-female participation might be responsible for the skewed distribution of alcohol use found in the study. So, in future studies, it would be a good idea to have equal numbers of male and female participants.

Third limitation of the study was that it was a cross-sectional study. Longitudinal studies could provide more comprehensive explanation about alcohol use with current study variables. For example, there might be changes in attachment styles, and mentalization levels of individuals over time in a longitudinal study, which could in turn be associated with changes in alcohol consumption.

Another limitation of the current study was the distribution of the scores of alcohol measures. There were not enough people in the harmful risk group for alcohol abuse, and in one scale scores were not normally distributed. These results may be related with sample characteristics that are not known to the author. Furthermore, alcohol use might have been influenced by the conditions related with the pandemic. Restrictions due to pandemic changed people's lives, and forced them to be away from social life reducing alcohol use. In addition to the restrictions, most of the students went back to live with their parents, and decreased their alcohol consumption in such an environment. Therefore, in the future studies, it is recommended to take major life changes in individuals' lives into account. For instance, researchers may include questions to assess the change in alcohol

consumption pre- and during pandemic. Another reason for present results could be related with the affordability of alcohol. Alcohol prices have increased significantly, reducing the sales for students who are the major consumers of alcohol. Another reason could be that people might have engaged in different kinds of maladaptive behaviors, e.g., binge eating or self-mutilation, in order to regulate extreme emotions they experience instead of abusing alcohol. Therefore, future studies might measure various maladaptive emotion regulation behaviors to overcome this limitation. Last reason might be that in an Islamic country, individuals might have been hesitant to share information related to their alcohol consumption.

Another limitation of the current study was related with psychometric features of the mentalization scales used. RMET showed low internal consistency reliability, so it is recommended that researchers use more reliable measures to assess other-oriented mentalization. The second mentalization scale was not comprehensive enough to measure every aspect of the mentalization capacity. There is a scale measuring mentalization in-depth, which was called Reflective Functioning Questionnaire-54 (RFQ-54). However, there is no reliability and validity study conducted in Turkey, so future research can focus on adapting RFQ-54 with Turkish samples.

Finally, the current study used a non-clinical sample to test the relationship between mentalization, attachment and alcohol use. It is possible that in non-clinical samples in Turkey, alcohol use is not frequent enough to be considered problem

drinking. It would be important to replicate this study using participants from clinical samples since findings of the current study coming from non-clinical sample cannot be generalized to clinical samples.



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Substance Abuse and Mental Health Services Administration (SAMHSA). 2019 National Survey on Drug Use and Health (NSDUH). Table 5.4A—Alcohol Use Disorder in Past Year among Persons Aged 12 or Older, by Age Group and Demographic Characteristics: Numbers in Thousands, 2018 and 2019.

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APPENDICES

