# PSYCHOLOGICAL PREDICTORS OF PROBLEM GAMBLING BEHAVIORS

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# ABSTRACT

PSYCHOLOGICAL PREDICTORS of PROBLEM GAMBLING BEHAVIORS

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Gambling becomes a source of difficulties of varying severity for some individuals whereas it is a positive experience for most of other people. Although gambling continues to be an entertaining activity for the majority of gambling individuals, prevalence rates suggest that pathological gambling is not low compared to other types of diagnosis. Most of the data with respect to gambling is from Western gambling literature, whereas research investigating the associated features of problem and pathological gamblers are very limited in the Turkish sample. The present study aimed to adapt two gambling-related instruments into Turkish and subsequently to examine the contributory roles of gambling participation, personality, affect, cognition, and motives of Turkish gamblers on gambling severity and gambling-related harm. The present study sample consisted of 357 males who were gambling in the sports and horse-races betting terminals. The findings pointed

out it is important to conduct gambling research with Turkish samples considering the gambling severity and harm scores of the participants. The Turkish versions of Gambling-Related Cognitions Scale and Gambling Motives Scale showed promising psychometric properties with respect to their reliability and validity analyses. Besides, relatively higher negative affect, neuroticism, gambling-related cognitions, avoidance motive, and gambling participation were found to be associates of probable pathological gambling among Turkish regular gambling individuals. Moreover, the relationships of gambling cognitions / motives and gambling severity were mediated by the gambling participation. The main findings and related findings of the present study together with their implications are reported and discussed within the relevant gambling literature.

Keywords: Pathological Gambling, Cognition, Motive, Personality, Gambling Participation

# ÖZ

SORUNLU KUMAR OYNAMA DAVRANIŞLARININ PSİKOLOJİK YORDAYICILARI

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Haziran 2012, 277 Sayfa

Kumar oynama, bazıları için değişen şiddette sorunlara neden olurken, büyük çoğunluk için olumlu bir deneyimdir. Her ne kadar kumar oynama büyük çoğunluk için eğlenceli bir deneyim olmaya devam etse de yapılan prevalans çalışmaları patolojik kumar oynamanın diğer psikopatolojik tanılar kadar yaygın olduğunu ortaya koymaktadır. Kumar ile ilişkili verilerin çoğu Batıda yürütülmüş çalışmalardan gelirken, Türkiye örneklemimde sorunlu ya da patolojik düzeyde kumar oynayanların özelliklerini belirlemeye yönelik olarak yapılmış araştırmaların sayısı son derece sınırlıdır. Bu çalışmada kumar oynama ile ilişkili iki ölçeğin Türkçeye uyarlamasının yapılması hedeflenmiş, kumar oynama şiddeti ve kumardan kaynaklanan olumsuzluklar bağlamında Türkiye'de kumar oynayan kişilerin kumar katılımı, kişilik, duygu-durum, kognisyon ve motivasyonlarının incelenmesi

hedeflenmiştir. Bu amaçlar doğrultusunda, at yarışı ve spor müsabakaları üzerine bahis oynatılan bayilerde kumar oynayan 357 erkek katılımcı çalışmanın örneklem grubunu oluşturmuştur. Çalışmanın bulguları, katılımcıların aldıkları kumar şiddeti ve kumardan kaynaklanan zarar puanları göz önünde bulundurulduğunda, Türk örnekleminde kumar ile ilişkili araştırmaların yapılmasının gereğini ortaya koymuştur. Kumar ile İlişkili Düşünceler Ölçeği ve Kumar Motivasyonları Ölçeği'nin Türkçe versiyonları, güvenilirlik ve geçerlilik analizleri sonuçları göz önünde bulundurulduğunda tatmin edici psikometrik özellikler göstermiştir. Ayrıca, görece yüksek olumsuz duygu-durum, nörotik kişilik özellikleri, kumar ile ilişkili düşünceler, kaçınma motivasyonu ve kumar katılımı düzenli kumar oynayan Türk örneklem grubunda patolojik düzeyde kumar oynama ile ilişkili bulunmuştur. Kumar katılımı ise kumar ile ilişkili düşünceler ve kumar oynama motivasyonları ile kumar oynama şiddeti arasındaki ilişkiyi yordamıştır. Bu ve ilişkili diğer bulgular uygun kumar oynama literatürü bağlamında sunulmuş ve tartışılmıştır.

Anahtar Kelimeler: Patolojik Kumar Oynama, Biliş, Motivasyon, Kişilik, Kumar Katılımı

To

My Wife

&

Our Son

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# TABLE OF CONTENTS

# LIST OF TABLES

TABLES

# LIST OF FIGURES

FIGURES

# CHAPTER 1

# INTRODUCTION

Different types of gambling such as betting on races, playing cards, slot machines, lotteries attracts individuals all over the world. Some individuals keep on gambling in spite of the harm created by gambling. Problem gambling is suggested to occur when the gambling of the individual is out of control and personal, interpersonal, and social problems are produced (Raylu & Oei, 2004a). Pathological gambling is a technical term defined by American Psychiatry Association (APA; 2000) with current clinical indications of preoccupation, tolerance, withdrawal, loss of control, escape, chasing, lying, illegal acts, risked relationships, and bailout in the Diagnostic and Statistical Manual of Mental Disorders (DSM) IV-TR. The examination of prevalence rates of pathological gambling suggests that, it is not less frequent as compared to the other diagnosis. For instance, rates of life time pathological gamblers were estimated as 1.0% in Brazil (Tavares, Carneiro, Sanches, Pinsky, Caetano, Zaleski, & Laranjeira, 2010), 1.1% in Switzerland (Bondolfi, Jermann, Ferrero, Zullino, & Osiek, 2008), 1.8% in Hong Kong (Wong & Ernest, 2003) in recent prevalence studies. When these numbers are converted into actual numbers of people in the population including the individuals who have gambling-related problems but who are not pathological gamblers and considering the negative

effects of the gambling behavior on the non-gambling significant others, the problems begin to seem more dramatic.

Gambling research is still in a state of evolution and expansion (Currie, Hodgins, Wang, el-Guebaly, Wynne, & Chen, 2009), although remarkable increase in gambling research over the last years is evident (Johansson, Grant, Kim, Odlaug, & Götestam, 2009). Problem/pathological gambling have been studied in relation to various relevant variables such as demographics (e.g., Kessler, Hwang, Labries, Petukhova, Sampson et al., 2008; Voldberg, Nysse-Corris, & Gerstein, 2006), personality (e.g., Kaare, Mottus, & Konstabel, 2009), gambling motives (e.g., Lee, Chae, Lee, & Kim, 2007; Stewart & Zack, 2008), gambling-related cognitions (e.g., Miller & Currie, 2008; Raylu & Oei, 2004b), affect (e.g., Matthews, Farnsworth, & Griffiths, 2009), gambling participation (e.g., Faregh & Leth-Steenson, 2011; Petry & Mallya, 2004) in the literature. However, the interest in research on the gambling problems is limited in Turkey. In relation, lack of standardized measurement instruments to assess various relevant gambling-related dimensions may be both the cause and the result of this limited interest. From this standpoint, the present study aims first to adapt two scales to assess cognitions and motives of the gambling individuals in Turkey. Personality, gambling-related cognitions, gambling motives, affect, stages of change, gambling participation, and demographics will be examined in order to analyze the associates of gambling severity and gambling-related harm of the gambling individuals in Turkey as the second major aim of the current study.

The first 'introduction' chapter of this thesis focuses on the relevant literature of gambling associates together with a comparative approach on DSM classification

of pathological gambling and research based classifications of gambling. This will be followed by the aims and the research questions for the present study. In the second 'method' chapter, the sample of the study is introduced and instruments utilized for the current study are presented. The results of the analyses conducted to test the hypotheses of the present study are presented in the third chapter. Finally, findings of the current study with respect to the relevant literature, their implications and limitations are discussed in the fourth chapter.

## 1.1 An Overview of Gambling

Petry (2005a) states that gambling is part of human life since prerecorded times. Thus, gambling is not a new phenomenon. For instance dice was found dated from approximately 3000 BC in an Egyptian tomb (France, 1902; cited in Petry, 2005a). Descriptive features of gambling behaviors and gamblers are present in historical accounts of many cultures (National Research Council, 1999). Within more recent historical context the novel 'The Gambler' by Dostoyevski is an outstanding portrait of gambling associated problems and features of what is now called 'pathological gambling' such as loss of control, hopelessness, and cognitive distortions from the literature realm. Being of the author's own experiences in a fictionalized form makes the mentioned novel more striking.

Gambling is a common activity all over the world with different forms and with different types of gambling activities of the participants due to their preferences. The expectation is gaining something of value more than the invested. Ways of

gambling are diverse (Orford, 2005). Betting something of value on games such as sports, horse or dog races, slot machines, dice, cards are some known forms of gambling. Even covert gambling like practicing unsafe sex, engaging in extreme sports are mentioned as cheap but still dangerous forms of gambling (Freimuth, 2008). New forms of gambling are also being presented through technological changes (Orford, 2005). For instance Petry and Mallya (2004) propose that Internet presents the most controversial forms of gambling as well as it is the newest one.

Gambling is considered as a form of risk taking behavior (Slutske, Caspi, Moffitt, & Poulton, 2005). Freimuth (2008) defines gambling as taking a risk or relying on chance when the outcome is not certain. According to a similar definition excluding the 'chance' factor, gambling is defined as money or possessions risking of people on the result of something which is not certain (Longman Dictionary of Contemporary English). Thus, risk and uncertainty which are both inevitably interdependent concepts in any frame are formal defining features of gambling.

Petry (2005a) underlining "unpredictability" as an inevitable aspect of life for choices of all species guided by probabilistic outcomes, gives a remarkable example about the coyote that comes across a group of rabbits in the wild in order to attract attention to the possibility of considering gambling from a sociobiological perspective. The dilemma of the coyote is either going after a young bunny almost ensuring a small meal or chasing the larger rabbit for a more satisfying meal risking not getting any food. Petry (2005a) acknowledges that repeated risky decisions especially the ones that require a substantive investment of resources will probably bring about the end of the organism from a more macroscopic perspective. The

pathological gambler may be compared to the coyote that chases the large rabbit and ready to invest it for another larger one as soon as he or she catches the large rabbit in spite of destructive social, financial, psychological gambling related adverse consequences.

Some people do not prefer to gamble at all whereas some continue to gamble in spite of its destructive social, financial, and psychological consequences. On the other hand, some may gamble for long duration without encountering any gambling related problems who are also called recreational or social gamblers. In other words, whereas gambling is a positive experience with a content of entertainment for most of people, it is related with difficulties of varying severity and duration for some others (Voldberg, Nysse-Corris, & Gerstein, 2006). Thus; biological, cultural, developmental, psychological, cognitive factors that differ the individual behavior of gambling or not on the one hand and various gambling behaviors of the participants with varying consequences on the other hand are important phenomena in regard to gambling related negative outcomes.

According to Raylu and Oei (2004a) problem gambling occurs when the gambling of the individual is out of control and it begins to cause personal, interpersonal, and social problems. Individuals who have problem with gambling experience loss of control (Pallesen, Mitsem, Kvale, Johnsen, & Molde, 2005) and this may lead to disruptions in the lives of these people. Financial, relationship, employment, intrapersonal, legal problems are reported as more common among pathological gamblers as compared to sub-threshold pathological gamblers (Namrata & Oei, 2009). Family relationships, psychological functioning, financial and legal

status may be affected by disordered gambling (e.g. Petry & Armentatano, 1999). An important part of gambling research is the harm caused by gambling. Giesbrecht (2009) suggests that understanding the gambling-related damage is important to undertake more effective control measures. The harm caused by gambling is various. For instance in a recent research conducted with academic health center employees, nearly one third of pathological gamblers reported that they had missed work to gamble (Petry & Mallya, 2004). According to results of another study, Wiebe, Single, and Falkowski-Ham (2003a) reported several negative impacts experienced because of others' gambling such as financial (e.g. lending money, loans not paid back, valuables taken or sold) and psychological concerns (been neglected/abandoned, been threatened). It is obvious that the harm caused by gambling does not solely belong to the gambling individual but also affects others around him or her. When these findings are considered, examination of both gambling behavior and its negative consequences becomes a matter of public concern (e.g., Chou & Afifi, 2011; Cox, Kwong, Michaud, & Enns, 2000; Faregh & Leth-Steensen, 2011; Korn & Shaffer, 1999; Nower, Derevensky, & Gupta, 2004). For instance, Cox and colleagues (2000) argue that a more inclusive approach within diagnosis frame of pathological gambling may be required for education, prevention, and early intervention of problem gambling experiences in the population. Shaffer (2005) mentions about the transition from an addicted individual view who has poor values or personal choices to a more complex and interactive model of a population based psychology. Public health, behavioral economics, socio-cultural factors are part of that psychology (Shaffer, 2005). Unfortunately little research has been

conducted to investigate normal or low-risk gambling as compared to problem and pathological gambling (Currie, Hodgins, Wang, el-Guebaly, Wynne, & Chen, 2009). Moreover treatment-seeking gamblers who may have different characteristics as compared to non-treatment seeking gamblers usually compose the samples of different studies (e.g., Steel & Blaszczynski, 1998; Stinchfield, Govoni, & Frisch, 2005). However, they may not represent the general population since they are at the high end of the gambling severity continuum (Petry, 2009). From another perspective, what motivates one to continue gambling in spite of the losses (Raylu & Oei, 2002) is an important question to answer. However part of the answer to that question may be concealed within the features of non-problem gamblers. Because distinguishing features of non-problem and problem gamblers in spite of losses of the latter are critical within this context. In other words, an accurate answer of that question also requires an accurate picture of non-problem gamblers and non-gambling individuals as well as problem and pathological gamblers.

Multiple terminologies that have been conceptualized to identify individuals who gamble and who have gambling-related problems are evident in the gambling related literature. For instance Shaffer, Hall, and Vander-Bilt (1999) proposed that conceptually equivalent categories have been named differently as in the case of the most disordered level of gambling with names like “pathological”, “probable pathological”, “excessive”, “compulsive” gambling in different studies. The examples of labeling individuals on a continuum of gambling severity are various. For example, el-Guebaly, Patent, Currie, Williams, Beck, Maxwell, and Jian (2006) classified their respondents in non-problem, low severity, moderate/high severity of

gambling groups whereas Voldberg and colleagues' (2006) classification was composed of low-risk, at-risk, problem, and pathological gamblers. Nower, Derevensky, and Gupta (2004) categorized their sample as nongamblers, social gamblers, problem gamblers, and probable pathological gamblers. Gupta and Derevensky (1998) categorized their sample as non-gamblers, occasional gamblers, regular gamblers, and problem and pathological gamblers. Wiebe and colleagues (2003a) categorized their sample as non-gamblers, non-problem gamblers, at-risk, modeate problems, and severe problems based on Canadian Problem Gambling Index. Several other examples such as the combination of pathological and problem gambling as 'problematic gambling' (Johansson, Grant, Kim, Odlaug, & Götestam, 2009), problem and pathological gambling as 'disordered gambling' (Chou & Afifi, 2011) are also evident in the gambling literature. These multiple terminologies together with varying definitions and criteria contribute to the confusion and uncertainty in this area (Derevensky, Gupta, & Winters, 2003; Blaszczynski, Ladouceur, & Shaffer, 2004). Cox and colleagues (2000) state that the parameters used to distinguish various gamblers are not clear. This confusion and uncertainty also presents a difficulty in comparing the results of different research findings. Conceptual clarity is required for at least more precise communication purposes.

Although it is proposed that there is an increase in gambling research in the last several years (Johansson et al., 2009), Currie and colleagues (2009) suggest that the gambling research is still in a state of evolution and expansion. The view suggesting that gambling research is still in infancy is shared by many researchers in the area (e.g., Chiu & Storm, 2010; Milosevic & Ledgerwood, 2010; Raylu & Oei,

2004a). The delay of preventive actions against gambling is also discussed in relation to the lack of rigid empirical research (Johansson et al., 2009). In addition to the mentioned insufficiency, most of the data with respect to gambling is from Western gambling literature. However understanding the contribution of cultural factors that will improve the understanding of the development and maintaining factors of gambling and tailoring the treatment dependently necessitate the research of gamblers from different cultures (Raylu & Oei, 2004a). For instance research investigating the associated features of probable problem and pathological gamblers are very limited in the Turkish culture. Taking into consideration the prevalence estimates all over the world concerning problem gambling and the negative economic, social, psychological consequences for gamblers, their families, and society as a whole; there seems to be no reason for Turkish society not to have similar problems. These kinds of research from different cultures will aid on empirical research globally on one hand and will contribute to the understanding of cultural influences on the other hand.

### 1.2 DSM Classification of Pathological Gambling Disorder

Pathological gambling is a technical term used by American Psychiatry Association (APA) to indicate a disorder (Blaszczynski, Ladouceur, & Shaffer, 2004). Pathological gambling is classified as “Disorders of Impulse Control not Elsewhere Classified” together with kleptomania, pyromania, intermittent explosive disorder, and trichotillomania in the Diagnostic and Statistical Manual of Mental

Disorders (DSM) IV-TR (APA, 2000). It is suggested that impulse control disorders are not so rare and they may be more common as compared to more extensively studied psychiatric disorders (Schmitz, 2005). The people who endorse five or more of the following symptoms (APA, 2000) which are conceptualized as preoccupation, tolerance, withdrawal, loss of control, escape, chasing, lying, illegal acts, risked relationship, and bailout are defined as pathological gamblers:

A. Persistent and recurrent maladaptive gambling behavior as indicated by five (or more) of the following:

(1) is preoccupied with gambling (e.g., preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)

(2) needs to gamble with increasing amounts of money in order to achieve the desired excitement

(3) has repeated unsuccessful efforts to control, cut back, or stop gambling

(4) is restless or irritable when attempting to cut down or stop gambling

(5) gambles as a way of escaping from problems or relieving dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression.)

(6) after losing money gambling, often returns another day to get even ("chasing" one's losses)

(7) lies to family members, therapist, or others to conceal the extent of involvements with gambling

(8) has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling

(9) has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling

(10) relies on others to provide money to relieve a desperate financial situation caused by gambling

B. The gambling behavior is not better accounted for by a Manic Episode.

### 1.2.1 Theoretical and Empirical Roots of Pathological Gambling Disorder Diagnosis

The term 'pathological gambling' was first included in the third revision of the DSM (APA, 1980). DSM criteria for pathological gambling were adapted from DSM criteria for substance-related disorders (Lesieur & Rosenthal, 1998; cited in Toce-Gerstein, Gerstein, & Voldberg, 2003) due to their similarities such as failure to control behavior; continuation of addicted behavior although it has substantial negative consequences; and compulsion or craving (Shaffer, LaBrie, LaPlante, Nelson, & Stanson 2004). Shared similarities between pathological gambling and substance use disorders are well accepted in the related literature (e.g., Petry, Litt, Kadden, & Ledgerwood, 2007) due to empirically established associations and comorbidity between the two (e.g. Kessler, Hwang, Labries, Petukhova, Sampson, & Winters, 2008; Kruedelbach, Walker, Chapman, Haro, Mateu, & Leal, 2006; Voldberg et al., 2006). For instance neurocognitive deficits present in both alcohol dependent and problem gambling participants as compared to healthy controls was reported according to the findings of a recent research (Lawrence, Luty, Bogdan,

Sahakian, & Clark 2009). Associations of gambling and substance use disorders are important since pathological gambling is proposed to be reclassified in 'Substance Use and Addictive Disorders' in DSM V by the work group instead of 'Impulse-Control Disorders Not Elsewhere Classified' (Access: www.dsm5.org). 'Substance Use and Addictive Disorders' category is an expanded form of prior 'Substance-Related Disorders' category. Comorbidity, some physiological and biological commonalities, genetics, treatment and outcome similarities are being reviewed in the literature within the perspective of advantages and disadvantages of broadening the scope of the substance related disorders to include pathological gambling (e.g., Petry, 2006; Potenza, 2006).

However objections to this modeling are also present in the literature due to insufficient supportive empirical data (e.g., Blaszczynski, 2005; Petry et al., 2007). For instance Tavares, Zilberman, and el-Guebaly (2003) state that the overlap in relation to etiological and clinical aspects of substance dependence and pathological gambling is not a complete one. Ledgerwood and Petry (2005) state that addictive and impulse-control disorders are different in terms of their causes and their manifestations. In spite of the objections, the number of the researchers terming gambling as an addiction in the literature is not rare (e.g., Freimuth, 2008; Wood, & Griffiths, 2007). In addition, inspiration of gambling researchers by addiction literature is also obvious in the gambling literature (e.g., Stewart, Zack, Collins, Klein, & Fragopoulos, 2008; Stewart & Zack, 2008). Hodgins (2008) calls attention to the fact that gambling field had been influenced by more extensive and mature research findings reported in substance use disorders area together with shift of a

number of top substance abuse researchers into gambling research as gambling disorders had become an increasing concern worldwide. Thus, research from the substance use disorders field is an important part of the gambling research literature.

### 1.2.2 Evaluation of DSM-IV Pathological Gambling Criteria

The appropriateness of DSM criteria including both content and threshold number of criteria for pathological gambling is not without oppositions (e.g., Rosenthal, 1989; Lesieur & Rosenthal, 1991). For instance, with regard to the content of the official pathological gambling criteria and related measurement instruments developed to assess gambling disorder, Cox and colleagues (2000) attract attention to the fact that the four of ten DSM criteria refer to money or finances. The researchers suggest that massive financial decline due to gambling might be the problem of minority of disordered gamblers.

One of the basic oppositions with regard to DSM criteria is whether it represents the majority of pathological gamblers or not. For instance Petry (2003a) suggests that DSM criteria may be reflecting the most severe form of disordered gamblers. According to results of Stinchfield, Govoni, and Frisch (2005) conducted with 121 individuals undergoing treatment, chance of being a member of gambling treatment clients for individuals having three criteria was found approximately 50%; a rate rather high. Rosenthal (2003) discusses that an individual with three or four pathological gambling criteria might be diagnosed as pathological gambler whereas another individual who has five or more criteria might not be diagnosed so justifying

his argument with regard to flexibility of cut-off score. As Vachon and Bagby (2009) suggest pathological gambling is categorized as a unitary diagnostic construct in DSM. In other words, DSM (APA, 2000) classification of pathological gambling introduces two broad categories of people who are pathological gamblers at one hand and the "others" who are not pathological gamblers on the other hand as it is the case in most of the disorders. The "others" within the frame of pathological gambling are composed of individuals who do not gamble at all or the individuals who gamble with differing features on dimensions such as their gambling regularities, intensities, and related outcomes. A subthreshold category such as the case of "abuse" in substance use disorders does not exist for pathological gambling.

Room (2005) objects the threshold number of criteria for the pathological gambling disorder in DSM in a more explicit manner. Room (2005) attracts attention to an implicit agreement between gambling industry and academic entrepreneurs who seek funding from that industry with a content of confining pathological gamblers to a small fraction of population. He justifies his point of view by increases in the threshold number of criteria for the pathological gambling disorder in DSM's: three criteria in DSM-III, four criteria in DSM-III-R, and five criteria in DSM-IV.

Cox and colleagues' (2000) research findings are important suggesting that problem and probable pathological gamblers share many common features measured by South Oaks Gambling Screen (SOGS; Lesieur & Blume, 1987) in spite of the present diagnostic discrimination. They report that gamblers with low scores on SOGS (1-2) were more similar to problem gamblers (SOGS: 3-4) and probable pathological gamblers (SOGS: 5-higher) as compared to non-problem gamblers

(SOGS: 0) in dimensions such as gambling frequency, motivation to gamble for money or distraction. Their comment on the implications of their research findings suggest that significant gambling difficulties could also be common for those who meet criteria for probable pathological gambling and for those who do not meet criteria for probable pathological gambling but who meet for problem gambling.

In a related research conducted to assess reliability, validity, and classification accuracy of DSM-IV pathological gambling criteria Stinchfield, Govoni and Frisch (2005) stated that the resources for the DSM-IV diagnostic criteria were based upon clinical experience and group consensus by experts committee, however research evidence was very limited. According to the reported results of their research, DSM-IV criteria yielded a unidimensional scale according to principal component analysis with a satisfactory internal consistency measured as .92 by Cronbach's alpha and factors loadings of ten criteria ranged from .60 to .87. Criteria items of numbers 3 (unsuccessful efforts to control, cut back, or stop gambling), 1 (preoccupation with gambling), 5 (gambling as a way of escaping from problems), and 6 (chasing losses) were found to be the best discriminators between pathological and nonpathological gamblers. Differential power of ten diagnostic criteria leads the authors to argue that assigning weights to diagnostic items would further improve the classification accuracy of DSM criteria. Stinchfield, Govoni, and Frisch (2005) reported that four criteria cut-off score misclassified nine gambling treatment clients as not having the disorder where as five criteria cut-off score misclassified twenty gambling treatment clients as not having the disorder out of 121 individuals undergoing treatment. Stinchfield, Govoni, and Frisch (2005) concluded

that improvement of classification accuracy of DSM-IV diagnostic criteria was possible through lowering cut-off score or using weighted criteria to reduce the false negative rate that means individuals' falsely not getting diagnosis although they have pathological gambling disorder.

As evident in DSM criteria, frequency of gambling and amount of money lost in gambling is not defined in pathological gambling disorder. A frequent gambler with huge monetary losses may not be officially diagnosed as pathological gambler if the person does not meet five or more of the above symptoms. On the other hand, following the same rationale an infrequent gambler with minor monetary losses may be officially diagnosed as pathological gambler if the person meets five or more of the above symptoms. However, high correlations were estimated between DSM-IV criteria and gambling frequency (.48), largest amount of money wagered in gambling in one day (.62), and number of days spent gambling in the past thirty days (.32) according to results of Stinchfield, Govoni, and Frisch's (2005) research findings.

It is also important to note that, gambling related problems may be hidden by the gambler ('lying about gambling behavior to conceal the excess of involvement', is one of the symptoms of pathological gambling) that prevents the awareness of significant others or may be attributed to other problems which in turn leads difficulty to identify "less" severe cases (Petry, 2005a). Additionally, self report of the most symptoms and subjectivity in evaluating the effects of gambling in one's life (Petry, 2005a) may increase the complexity of the assessment and identification of those cases. Additionally Freimuth (2008) suggest several factors such as shame and immoral and illegal acts that mask self-identification of the gambler. Overall

identification of the 'pathological gambler' may be complicated due to DSM criteria content and threshold number of criteria at one hand and due to questionable reliability of self-report of the gambler on the other hand.

### 1.2.3 Necessity of a Sub-Threshold Gambling Category in DSM

A subtreshold condition or subclinical level of problem gambling omitted in DSM is discussed as having important implications for diagnosis and treatment of pathological gambling by Petry (2005a) such as inability to bill treatment of these individuals or stagnating research in relation to clinical presentation and symptoms of problem gamblers. Although the terms disordered or problem gambling refers to subclinical gambling related problems, their use for "pathological gambling" is clinically meaningful (e.g., Petry, 2005a; Voldberg, Nysse-Corris, & Gerstein, 2006). Gained legitimacy for clinicians to intervene therapeutically with gamblers before they become fully pathological may be a rewarding outcome of an added diagnosis of problem gambling like one of alcohol abuse (Toce-Gerstein et al., 2003).

Classification of individuals on the basis of their gambling behaviors and related adverse consequences alongside the category of pathological gambling may be essential for both clinical practice and theoretical research. This will contribute to the recognition of the problems as early as possible, thus negative effects of gambling on self, family, and the community will be limited before it reaches a pathological form (Freimuth, 2008). According to Currie and colleagues' (2009) research analysis, risk of gambling related harm was present at any level of

gambling, in other words risk of harm was evident even at very low levels of gambling. Gambling related problems of the people other than ones diagnosed as pathological gamblers may be more severe over time (Voldberg et al, 2006). For instance although the authors underlined the necessity of replication of their study for validation purposes, Wiebe, Single, and Falkowski-Ham's research (2003a) is important to investigate the change versus stability of problem gambling over time. The authors reported that almost 10% of participants at each gambling level progressed to the next level that was more problematic in a one year follow-up study of 448 participants. This means that some gamblers who are not diagnosed as pathological gamblers at one point in time may be diagnosed as pathological gamblers at some point in time in the future.

Shaffer and colleagues (1999) propose that small improvements of subclinical level gamblers will result in greater overall public health improvements as compared to larger improvements of pathological gamblers. They also expect that subclinical gamblers will also be more responsive to treatment and social policy interventions as compared to pathological gamblers resulting in a lower social cost associated with gambling. Hodgins and el-Guebaly (2000) discuss that the prospects of behavioral change are likely to be better for at risk and problem gamblers as compared to pathological gamblers through education channels. However it is also important to note that, gambling related problems may not be necessarily chronic and progressive (Abbott, Voldberg, Bellringer, & Reith, 2004). In fact there are views and empirical evidence in the gambling literature supporting the phenomena of natural recovery from gambling related problems without any treatment (e.g., Hodgins & el-Guebaly,

2000; Hodgins, Wynne, & Makarchuk, 1999; Wiebe et al., 2003a). However, history of pathological gambling symptoms as the strongest predictor of current pathological gambling even after controlling for genetic and shared environmental influences (Scherrer et al., 2007) is also important empirical evidence. To sum up, there seems to be a consensus in the gambling literature with respect to a need for a subclinical pathological gambling diagnosis with various justifications (e.g., Rosenthal, 2003; Wiebe et al., 2003a).

### 1.3 Research-Based Classification of Gambling Behavior

In spite of unitary diagnostic construct of DSM for pathological gambling (Vachon & Bagby, 2009) continuum of gambling problems is usually divided into categories of increasing severity in gambling-related studies (Cox et al., 2000; el-Guebaly et al., 2006; Gupta & Derevensky, 1998; Nower, Derevensky, & Gupta, 2004; Voldberg et al., 2006). There is a consensus in the literature supporting a view of continuum of gambling disorders severity (e.g. Cox et al., 2000; Faregh & Leth-Steensen, 2011; Toce-Gerstein, Gerstein, & Voldberg, 2003). The categorization of gambling behavior and individuals along a continuum of gambling and gamblers has several implications. First of all this approach provides with a comparison opportunity on different dimensions of gamblers with varying severity. Secondly, investigation of features of gamblers and gambling behavior globally becomes possible. Otherwise investigation would be rather limited to pathological gamblers and pathological gambling. However, accumulated evidence suggest that gambling-

related harm is not peculiar to pathological gambling (e.g. Currie et al., 2009; Wiebe et al., 2003a) or progression in gambling severity is possible (e.g. Wiebe et al., 2003a). As Blaszczynski (2009) suggests possibility of harm at any level of gambling participation must be accepted. Thus these classification systems are reasonably preferred in gambling research in spite of the confusion and uncertainty in these classification systems of gambling continuum as usually reported by various researchers in the relevant literature (e.g., Blaszczynski, Ladouceur, & Shaffer, 2004; Cox et al., 2000; Derevensky, Gupta, & Winters, 2003; Shaffer et al., 1999).

Toce-Gerstein and colleagues' (2003) research approach and findings are important within the conceptualization of severity of gambling problems along a continuum considering qualitative differences among gambling patterns and related problems as well as quantitative differences. They concluded about four qualitatively different gambling patterns through a stepwise progression of severity namely; a non-clinical pattern marked by chasing, a subclinical pattern, a pathological gambling pattern, and finally more severe pathological gambling pattern. Toce-Gerstein, Gerstein, and Voldberg (2003) analyzing clustering of ten DSM-IV criteria for pathological gambling reported that most gamblers also called at-risk gamblers who met only one or two criteria stated that they chased their losses. Chasing was found to be a common sub-clinical symptom. Wood and Griffiths (2007) also reported that chasing losses and attempting to win back invested money was reported more often early on in the problem gambling based on their qualitative investigation of problem gamblers. In another research conducted by Linnet, Rojskjaer, Nygaard, and Maher (2006), chasing behavior of pathological gamblers was found to be

significantly more than non-pathological gamblers measured on Iowa Gambling Task suggesting that chasing behavior may have a discriminatory power between pathological and nonpathological gamblers. Problem gamblers of subclinical levels meeting three to four criteria additionally reported about lying, gambling to escape, and preoccupation symptoms according to Toce-Gerstein et al.'s (2003) findings. Pathological gamblers meeting five to seven criteria reported elevated rates of control lose, withdrawal symptoms, tolerance, risking their social relationships, and needing to be bailed out financially. Toce-Gerstein et al. (2003) identified the first three symptoms of pathological gamblers as internalizing dimensions of dependence and the latter two symptoms of pathological gamblers as externalizing dimensions of this relatively low-severity gambling group as compared to highest level pathological gamblers. Report of committing illegal acts to support gambling was peculiar to most of the highest level pathological gamblers who met eight to ten criteria. The authors interpreted their findings as a support to the idea that a hierarchical family of gambling disorders was possible. Underlying the speculative nature of their discussion with respect to the cross-sectional nature of their sample, they evaluated their findings within the frame of developmental ordering and the temporal clustering of gambling symptoms.

Two classifications systems will be presented here to clear the content of descriptive features of gambling and/or gambler of different levels. National Research Council's (NRC, 1999) and Shaffer, Hall, and VanderBilt's (1999) adaptation to name and define gambling along a continuum is composed of several levels. These levels are basically conceptualized by the gambler's involvement in

gambling and the related problems the gamblers encounter. Level 0 gambling, term used by NRC (1999), refers to not gambling at all. Level 0 gamblers do not wager at all. Level 1 gamblers also called "social" or "recreational" gamblers do not come across with any adverse gambling related consequences and gamble for entertainment or social purposes. According to Shaffer and colleagues' (1999) nomenclature, Level 1 gamblers include both non-problem gamblers and non-gamblers. Level 2 gambling, also termed as disordered or problem gambling, leads to negative results for the gambler, his or her family, friends, and significant others. Finally, Level 3 gambling refers to pathological gambling as classified by DSM IV in which the gambler has 5 or more of the symptoms listed.

Freimuth (2008) defines 'gambling addiction' along a continuum in four steps namely; casual gambling, at-risk gambling, problematic gambling, and severe problem gambling with related differing motivational content, consequences, and degree of control for each step. Although Freimuth (2008) does not report any empirically supportive data with respect to her classification, it presents a rich content which is in line with related research findings. In causal gambling, motivation of enjoyment comes from both winning money and social experience. Negative consequences for causal gambler are cited as rare and minor. He or she is hypothesized in full control in regard to gambling. In at-risk gambling, although the gambler does not think about gambling when not engaged in it, the motivation is not necessarily social though it is still an enjoyable activity. Staying up too late or loosing too much money are potential negative consequences of this step although these consequences are not necessarily permanent. At-risk gambler is still in control,

sticking limits that he or she sets. Loosing money more than he or she can afford as a result of gambling is rare. Mood altering effects through stimulation or as a way to escape is cited as major motivation of problematic gambler. Affected financial well-being because of gambling is cited as the negative consequence of problematic gambling in addition to lying or damaged relationships. Spending more time and money than intended in spite of feeling guilty is the indicator of decreased degree of control of the problematic gambler. In severe problem gambling which is the last step along the continuum of addictive gambling according to Freimuth (2008), motivation is staying in the play even the desired wins, mood, or level of stimulation are achieved. Thus, motivation of the severe problem gambler is no longer enjoyment or winning money. Financial well-being is increasingly destroyed and to stop thinking about gambling becomes difficult.

### 1.4 Prevalence Estimates of Gambling Behavior

Prevalence rates of problem and pathological gambling are usually measured on the bases of past year and lifetime gambling indicators. In spite of harm created by gambling both in quality of life and health (Faregh & Leth-Steensen, 2011) the prevalence rates of pathological gambling is not low compared to other diagnosis. Results from different studies estimate prevalence rates of 1% to 2% pathological gambling in Canada (Ladouceur, 1996), in United States (Volberg, 1996), in European countries (Beconia, 1996). More recently 1.2% life-time prevalence of probable pathological gambling, 2.7% life-time prevalence of problem gambling,

0.6% past-year prevalence of probable pathological gambling, and 1.4% past year prevalence of problem gambling was estimated in Sweden within a sample of 9917 individuals (Voldberg et al., 2001). Estimated pathological gamblers are even higher in some societies like Korea with rates of 3% to 4% (Lee, Lee, Chung, & Zwa, 1999). Rates of problem gamblers and pathological gamblers were estimated as 4% and 1.8% respectively in Hong Kong (Wong & Ernest, 2003). In more recent studies, lifetime prevalence rates of problem and pathological gamblers were 2.2% and 1.1% respectively in Switzerland (Bondolfi, Jermann, Ferrero, Zullino, & Osiek, 2008), 2.3% and 0.6% respectively in US (Kessler et al., 2008), 1.3% and 1.0% respectively in Brazil (Tavares, Carneiro, Sanches, Pinsky, Caetano, Zaleski, & Laranjeira, 2010).

There is not a prevalence study conducted in Turkey with respect to gambling. However a recent report based on a study with a nationally representative sample of 1536 participants, published by Government Inspection Board (GIB; 2009), a foundation of Turkish Presidency of Republic, gives some important indications of pathological gambling estimates. For instance, 3.5% of the participants among the ones who reported that they had gambled in the previous year (67.3% of the whole sample) stated that they would borrow money to gamble if they did not have money. The rate of gambling once or more in a week was reported as 40% among the same group.

Although the percentages may appear relatively small as compared to much more higher percentages of non-pathological gamblers or non-gamblers, these percentages will mean much more when converted into actual numbers of people in the population together with the adverse effects of the gambler's behavior on his or

her close environment specifically and on the public generally. It is also important to note that less severe forms of gambling addiction is not taken into account in the above figures of prevalence estimates (Freimuth, 2008). For instance life time pathological and at-risk gamblers were estimated as 9.5% in the general population (Voldberg et al., 2006). The proportions of the respondents who reported that they had ever participated in one or more gambling activities was 83%, who reported that they had gambled in the past year was 58%, once a month or more often was 22%, and once a week or more often was 10% in California with a sample of 7121 participants (Voldberg et al., 2006). To speculate that the scope of the public health related risks of gambling is not limited to the estimates of officially diagnosed pathological gamblers, will not be trivial taking into consideration the above estimates.

### 1.5. Common Factors Associated with Gambling

The question about the relation between the opportunities to gamble and prevalence of problem gambling is a valid inquiry to test the educated guess expecting a positive correlation between the two. Voldberg and colleagues (2006) discuss that increased gambling opportunities increase the risk of exposure and thereby create more pathological and problem gamblers. According to their point of view, as more people gamble, the risks for those individuals with specific vulnerabilities to gamble and to develop gambling related problems also increase. Blaszczynski and Nower (2002) discuss increased availability and increased

accessibility within the frame of ecological determinants of pathological gambling as a result of public policy and regulatory legislation fostering an environment in which gambling is accepted, encouraged, and promoted. It is also important to note that computer and telecommunications technology improvements also contribute to the availability of gambling (NRC, 1999).

The studies conducted to investigate the correlates of gambling behavior also focus on some demographic variables together with comorbidity of pathological gambling with other psychiatric disorders. Age, age of onset of gambling, socioeconomic class, marital status, gender, and minority ethnicity are some of the demographic variables that are examined in their association with disordered gambling (e.g., Afifi, Cox, Martens, Sareen, & Enns, 2010; Lang & Omori, 2009; Tavares et al., 2010). Although association of demographic variables with gambling behavior is widely examined in related research, some of the findings are contradictory. In their well known critical literature review, Johansson and colleagues (2009) concluded that male gender was a significant/well-established demographic risk factor for pathological gambling together with younger age whereas unemployment, being on social welfare, living in a large city, and lower academic achievement were probable risk factors for pathological gambling. On the other hand, reviewed literature in relation to education level, marital status, and income revealed either contradictory results (income and marital status) or no relationship (education level) according to Johansson and colleagues' (2009) review.

In spite of the established associations between gambling and its demographic correlates in majority of studies as the ones mentioned in more detail below, attempts

to explain about the nature of those associations are rather rare at one hand. Those explanations are required to add on the understanding of causal and maintaining factors of gambling behavior. On the other hand, it is also important to note that different samples with respect to demographic correlates of gambling are began to be examined. For instance gambling participation especially in older adults began to be more prevalent in recent studies (e.g., Hippel, Ng, Abbot, Caldwell, Gill, & Powell, 2009; Philippe & Vallerand, 2007; Potenza, Steinberg, Wu, Rounsaville, & O'Malley, 2006; VanderBilt, Dodge, Pandav, Shaffer, & Ganguli, 2004) in addition to commonly studied gambling behavior among youths (e.g., Bergevin, Gupta, Derevensky, & Kaufman, 2006; Ellenbogen, Gupta, & Derevensky, 2007; Hansen & Rossow, 2008; Vitaro, Arseneault, & Tremblay, 1999). Accumulation of related data in future studies with different samples and increase in explanations about the nature of established associations between gambling and demographics will be important in prevention and intervention services for demographically risky groups.

Comorbidity with other disorders is not a rare phenomenon among pathological gamblers (e.g., Kerber, Black, & Buckwalter, 2008; Lorains, Cowlishaw & Thomas, 2011). For instance Chou and Afifi (2011) reported that past year disordered gambling including both problem and pathological gambling at baseline was associated with occurrence of any subsequent Axis I psychiatric disorder, any mood disorder, bipolar disorder, generalized anxiety disorder, posttraumatic stress disorder, any substance use disorder, alcohol use disorders, and alcohol dependence disorder measured three years after adjusting for sociodemographic variables. Thus, problems related with gambling are not limited to legal, social, and financial

problems but pathological gamblers also often have mental-health problems (Ledgerwood & Petry, 2005). The association of pathological gambling with other disorders is researched in a wide spectrum including disorders such as attention deficit / hyperactivity disorder (e.g. Rodriguez-Jimenez, 2006), bipolar disorder (e.g., Kennedy, Welsh, Fulton, Soczynska, McIntyre, O'donovan et al., 2010), obsessive-compulsive disorder (e.g., Anholt, Emmelkamp, Cath, vanOppen, Nelissen, & Smit, 2004). Association of gambling had also been started to be examined with different psychological constructs such as alexthymia (e.g., Parker, Wood, Bond, & Shaughnessy, 2005; Toneatto, Lecce, & Bagby, 2009).

Kim and colleagues (2006) stated that pathological gambling disorder has various etiological roots and represents heterogeneous disorders as it is the case with many other DSM-IV psychiatric disorders. Dell'Osso, Altamura, Allen, Marazziti, Hollander (2006) discus that frequent comorbidity of pathological gambling with other disorders is not surprising due to impulsivistic, addictive and bipolar features embedded in pathological gambling. Although comorbidity issue is a rather complex one, temporal relationship of pathological gambling with other disorders is critical. For instance comorbity of pathological gambling with another disorder may be a result, a cause of the other disorder, or co-occur independently as Kim and colleagues (2006) suggest for pathological gambling and mood disorders. Severity, treatment selection, and treatment outcome of pathological gambling may be influenced by the presence of psychiatric comorbidity (e.g., Ibanez et al., 2001; Ledgerwood & Petry, 2005). For instance Spunt (2002) suggested that pathological gambling comorbid with heroin misuse may accompany and reinforce drug use,

damage addiction treatment involvement, strengthen or produce problems, or even be a factor in relapse of heroin misuse. Comparing pathological gamblers in different dimensions with and without comorbid disorders may also be an important research area both for prevention and treatment efforts within this frame. Overall, accumulated empirical findings with respect to the demographic correlates and the comorbidity with other disorders are remarkable as common factors associated with gambling. However, presenting gambling availability first within this frame is plausible, since access to gambling is a necessary condition for gambling to be problematic although it is not a sufficient condition.

### 1.5.1 Gambling Availability

Access to the potentially addictive behavior is a must condition for addiction (Freimuth, 2008) whether it is in a legal or in an illegal form. Legalization of different forms of gambling by governments might be discussed as the major source of increasing prevalence rates of gambling (e.g., Cox et al., 2000). Petry (2003b) states that proliferation of legalized gambling accompanies more heterogeneous forms of gambling. Blaszczynski and Nower (2002) discuss increased availability and increased accessibility within the frame of ecological determinants of pathological gambling as a result of public policy and regulatory legislation fostering an environment in which gambling is accepted, encouraged, and promoted. It is possible that gambling related disorders may be much more widespread due to increased availability of gambling and new gambling technologies (National

Gambling Impact Study Commission, NGISC, 1999). This is one of the views in relation to gambling that suggests gambling is by itself inherently addictive and public policy makers should regulate gambling in order to minimize the risks for individuals (Orford, 2005). The other view is that gambling is not different from other range of excessive appetitive behaviors, that is why solution is in community education programs that target attitude change toward participation in gambling rather than restrictive legislative policies (Blaszczynski, 2005). Overall contradictory empirical data and views with respect to the association of gambling availability and gambling are present in the literature. Some of the below research findings support the view that gambling and gambling related problems increase as the availability of gambling increases whereas some research do not support the proposed association.

It is reported that a ten-fold increase in the availability of gambling was actualized in United States since the 1970's due to rapid growth of legal, commercial gambling (Voldberg et al., 2006). According to Ladouceur, Jacques, Ferland, and Girouz's (1999) research, 75% increase in the number of pathological gamblers was estimated in the second prevalence study in 1996 following the first one conducted in 1989 after 7 years as more gambling venues became more available in Quebec. The authors concluded that although firm causal relations can not be established due to methodological limitations, the frequency of gambling was affected by opportunities for gambling. Wiebe and colleagues (2003a) reported that 'more gambling opportunities' was the most frequent answer (18.4%) of the participants to the question inquiring about an event that took their gambling up on a regular basis. Welte, Barnes, Wieczorek, Tidwell, and Hoffman (2007) reported that gambling

problems were predicted by residential proximity to casinos in 30 years and older males studied among 2631 US adults. In another study conducted in Switzerland, prevalence rates of pathological and problem gambling were estimated to be 0.8% and 2.2% respectively (Bondolfi, Osiek, & Ferrero, 2000). This study of 1998 was replicated in Switzerland seven years later (Bondolfi, Jermann, Ferrero, Zullino, & Osiek, 2008) yielding prevalence estimates of 1.1% and 2.2% for pathological and problem gamblers respectively. These estimates were in terms of life-time prevalence of gambling. Bondolfi and colleagues (2008) reported that prevalence of disordered gambling did not change between 1998 and 2005 in spite of widespread openings of casinos in Switzerland.

The availability of gambling had also increased due to computer and telecommunications technology improvements (NRC, 1999). The recent studies, although limited in number, suggest a relationship between Internet gambling and problem gambling (e.g., Griffiths & Barnes, 2008; Matthews, Farnsworth, Griffiths, & 2009; Wood & Williams, 2007). It was reported that 6% of nationally representative sample in Britain reported that they used internet to gamble (Wardle, Sproston, Orford, Erens, Griffiths et al., 2007). The argument suggesting that Internet may be facilitating gambling-related problems that did not exist in the past or may be providing a highly accessible and suitable medium to gamble for the predisposed individuals (Matthews, Farnsworth, & Griffiths, 2009) is a speculative (since it lacks empirical support), but yet a rational one. Freimuth (2008) introduce the Internet as the new casino attracting attention to several hazardous and unsafe features of online gambling. Lack of social pressure to stop or limit losses for the alone gambler may

decrease the control over gambling and electronic cash without a material existence like plastic cards or paper may decrease the significance of loosing through perception of loosing as if play money according to Freimuth (2008).

General expectation is that the increased access will ultimately lead to an increased incidence of an addiction in general (Freimuth, 2008). However, Shaffer (2005) states that the conventional wisdom suggesting a necessary relationship between exposure and gambling related problems requires a multidimensional and interactive consideration for both scientists and policy makers. He further argues that without such a consideration, determination of gambling as a necessary and sufficient cause of problems such as suicide, bankruptcy or only a partial cause will not be possible. Shaffer's (2005) point of view is valuable considering the contradictory research findings exploring exposure and increased gambling related problems associations. Shaffer (2005) argues about the adaptation hypotheses of addiction against exposure hypotheses justifying his point of view with Nevada example which is a state that is eight times more exposed to gambling as compared to the next most exposed state, but does not show more problems in relation to gambling in proportion. What Shaffer (2005) proposes as adaptation hypothesis of addiction is gradual adaptation to the risks and harms of addicted potential objects following the novelty of initial exposure. Relying on this justification, Shaffer (2005) changes the question and asks the duration of adaptation process and if it is convenient to wait for that duration.

Living the entire life within a legalized gambling context may have important implications for the future. Shaffer and colleagues (1999) speculate that higher

estimates of disordered gambling among adolescents as compared to adults may not be explained solely by adolescents' relation with the 'illicit', but adolescents' social setting interactions such as availability of gambling, social setting changes, cultural approval of gambling may also be important. In relation, the authors argue that a lifetime estimate for a particular cohort can not decrease over time theoretically and in relation suggest that the adolescents sample will have higher level of disordered gambling when they reach adulthood in the future as compared to adults sample represented in the current studies. From a similar perspective, Cox and colleagues (2000) propose the necessity of monitoring the gamblers of the next generation. However, as Shaffer and colleagues (1999) also point out decreasing or remaining constant of prevalence rates of disordered gambling through social learning process as people begin to protect themselves against the adverse outcomes of gambling as a result of sufficient experience with gambling activities is also a possibility.

### 1.5.2 Demographic Correlates of Gambling

Younger age is one of the demographic correlates of pathological and problem gambling (e.g., Bondolfi et al., 2008; Gerstein et al., 1999; NRC, 1999; Scherrer et al., 2007, Shaffer et al., 1999). The life time and past year Level 3 gambling (most severe category of disordered gambling) prevalence ratio of adolescent to general adult populations were found to be 2.4 and 5.1 respectively in Shaffer and colleagues' (1999) meta-analysis. For Level 2 gambling (potential pathological gamblers), prevalence ratios of adolescent to adult samples were found

to be 2.5 and 5.3 for life time and past year respectively in the same study. Shaffer and colleagues (1999) concluded that likelihood of having experienced disordered gambling was dependent on age together with clinical situation (psychiatric or substance abuse disorders) of the gambler. According to results of Skokavskas and Satkeviciute's (2007) research results conducted in Lithuania with 835 adolescents who had a age range 10-18, 4.2% of the respondents were classified as pathological gamblers according to DSM-IV – Multiple Response-Adapted for Juveniles and 5.2% of the respondents were classified as pathological gamblers according to South Oaks Gambling Screen-Revised for Adolescents. In another epidemiological study conducted with a sample of youth population, 24.9% reported that they gambled weekly (Johansson & Götestam, 2003). According to results of Johansson and colleagues' (2009) critical literature review, younger age was found to be one of the only nine well-established risk factors among examined thirty five different factors in relation to pathological gambling.

It is important to note that there are research findings that did not reveal significant associations between severity of gambling and younger age (e.g., el-Guebaly et al., 2006; Chou & Afifi, 2011; Petry & Mallya, 2004; Welte, Barnes, Tidwell, & Hoffman, 2011) although the number of those studies is limited. el-Guebaly and colleagues (2006) categorizing 14934 respondents in one of the three non-problem, low severity, moderate/high severity of gambling groups reported that the variable of age did not differ significantly between these groups. According to the results of another study conducted by Voldberg and colleagues (2001), the researchers reported that youth in Sweden who were between ages of 15 and 17 were

less likely to gamble and they wagered less money on gambling as compared to adults. However they were more likely to experience gambling-related problems as compared to adults in spite of their lower gambling involvement.

Although young people seem to be suffering more from gambling related problems as compared to adults, overrepresentation of young age groups in most of the gambling studies is also questioned in the literature (e.g., Ladouceur et al., 2000, Petry, 2005a; Blaszczynski, 2005). For instance, Blaszczynski (2005) comment that there is a requirement for more related research to confirm that problem gambling is more prevalent among young adults. Derevensky, Gupta, and Winters (2003) reviewing related literature reported that they had identified five primary arguments that oppose the general consensus about gambling commonality for youth. The first argument about the possible overestimation of problem gambling prevalence rates for youth is that, more adolescents would present themselves for treatment, if the rates were as high as reported. Secondly, youth misunderstand and conjunctionally do not adequately comprehend many of the screening instrument questions. Thirdly, the discrepancy between pathological gambling for adults and youth prevalence rates is not logical since high gambling is more available to adults. Ultimately, common scoring errors and insufficient construct validity together with lack of good reliability in certain instruments for youth overestimate their prevalence rates are the other arguments that have been advanced to support the inflated rate of youth pathological gambling perspective.

In connection, the association between the age of onset of gambling and pathological gambling had also been examined in some studies. The results of those

studies are considerable showing that the earlier the onset of gambling, the likelihood of developing pathological gambling increases (e.g., Bondolfi et al., 2000; Voldberg et al., 2001). According to Bondolfi and colleagues' (2000) research findings the significant majority of potential and probable pathological gamblers were those who began gambling before the age twenty-one. Age of onset was also found to be a risk factor according to Voldberg and colleagues' (2001) research results. The mean age of 15.6 years old in which problem gamblers started gambling in Sweden was significantly lower than the mean age of 19.9 years old in which non-problem gamblers started gambling in Sweeden. In a more recent research analysis conducted by Kessler and colleagues in 2008, first gambling report was found to be significantly earlier for the pathological gamblers as compared to the non-problem gamblers in a sample of 9282 participants selected from US household population. Association of younger age onset and gambling severity was also reported in a recent research carried out with 904 pathological gamblers in Spain (Jimenez-Murcia, Alvarez-Moya, Stinchfield, Fernandez-Aranda, Granero et al., 2010).

With respect to other demographic correlates of pathological or problem gambling apart from age, there is empirical evidence supporting the associations between gambling and minority ethnicity, lower socioeconomic class, single or divorced marital status, and male gender. According to the results of Kessler and colleagues' (2008) research conducted with participants sampled from US household population; being young, male, and Non-Hispanic Black, and having less than a college education were significantly associated with pathological gambling. Being male, unmarried, between ages 25 and 45, and living in a big city contributed to an

increased likelihood of experiencing gambling related problems according to another study conducted in Sweden with a sample of 9917 participants (Voldberg et al., 2001). Low socioeconomic status measured by family income, years of education, occupational prestige and minority ethnicity were also significant predictors of pathological gambling symptoms even after controlling for the influence of gambling frequency, wins and losses, number of types of gambling, substance use, and criminal offending in another study (Welte et al., 2004). The data of Welte and colleagues' (2004) research was from 2168 US population respondents who were aged 18 and older. According to the results of Chou and Afifi (2011) being female, having a university degree as compared to less than a high school education, and being Hispanic decreased the odds ratios of past year gambling as a result of logistic regression analyses. Marital status, household income, employment status did not reveal statistically significant results in comparison of disordered and non-disordered gamblers according to the results of the same research. A significant majority of males, individuals with lower household income, and wage earner people who were employed full time were represented among potential and probable pathological gamblers in another study conducted in Sweeden (Bondolfi et al., 2000). However, gender, marital status, education level, income and working full time did not significantly discriminate pathological and problem gamblers from non-gamblers in the replication study (Bondolfi et al., 2008). According to the results of Cunningham-Williams and colleagues (1998) research findings, no differences were found with respect to gambling problems dependent on having a college degree or not. Risk for moderate/high severity gambling was found to be higher for participants who had a

lower level of education as compared to non-problem and low severity gambling categories according to the results of el-Guebaly et al.'s (2006) research. However severity of gambling was not associated with income level in the same study.

According to Voldberg and colleagues' (2006) research results conducted in California the life time prevalence of at-risk, problem, and pathological gambling was particularly high among men, young adults, unemployed people, African Americans and individuals belonging to racial and ethnic minority groups classified as 'other'. Risk for at-risk, problem, and pathological gambling was also found to be higher among disabled individuals who mostly reported about mobility impairments (73%) and difficulty with daily activities (56%) according to the results of the same study. Petry and Mallya's (2004) research is also noteworthy here with respect to their study sample that was composed of 904 employees at an academic health center which was a particular setting as compared to the other mentioned studies. Being male, having lower income, and being full-time employed were significantly associated with gambling problems whereas race or age did not differ statistically between Level 1, 2, and 3 gamblers. Additionally Level 3 gamblers completed fewer years of education as compared to Level 1 gamblers.

Some of the demographical associates of gambling are consistent across various research whereas some of them are contradictory. Different sample compositions of the various studies may be partly responsible of the inconsistent results at one hand. On the other hand, differences in measurement instruments used in those studies to assess gambling severity and gambling participation may also be influencing the results. To sum up, in spite of the contradictory findings with respect

to the demographical associates of gambling; younger age, earlier age of onset in gambling, single or divorced marital status, male gender, and lower education are some of the established socio-demographic factors related to pathological gambling.

### 1.5.3 Comorbidity

Co-occurrence of pathological gambling with other disorders or with accompanying symptoms of other disorders may be critical since severity, treatment selection, and outcome of pathological gambling disorder may be influenced by the presence of psychiatric comorbidity (e.g. Ibanez et al., 2001, Ledgerwood & Petry, 2005). Moreover, determination of primary and secondary disorders may also have important implications for treatment options since the other disorder may be the cause or the result of pathological gambling, or both may occur independently as Kim and colleagues suggest (2006). It is also important to add to the above essentialities that comorbidity of pathological gambling with a variety of other disorders is not a rare phenomenon. For instance, Kessler and colleagues (2008) reported that 96.3% of nationally representative US household respondents who had lifetime pathological gambling disorder also met lifetime criteria for one or more other disorders. In an earlier study conducted with thirty pathological gamblers, 60% of the participants met criteria for a current (past six months) disorder whereas only three subjects did not have a comorbid life-time Axis I disorder (Black & Moyer, 1998). The above reasons may be speculated as the causes of the disclosure of plenty of related research in the literature.

According to Grant and Kim's (2003) research examining comorbidity of impulse control disorders in pathological gamblers, overall twenty two (22.9%) of ninety six adult pathological gamblers had a life-time comorbid impulse control disorder. Compulsive sexual behavior and compulsive buying as the mostly diagnosed impulse control disorders were followed by nail biting, intermittent explosive disorder, kleptomania, trichotillomania and pyromania among pathological gamblers. Pathological gamblers with and without comorbid impulse control disorder did not differ significantly in terms of demographic variables, overall social and occupational functioning, rates of nicotine consumption, family history for alcohol use disorders, and gambling related difficulties. The groups also did not differ significantly when compared on Axis I diagnoses namely; major depressive, bipolar, alcohol use, substance use, obsessive-compulsive disorders. However, pathological gamblers with comorbid impulse control disorders reported significantly more intense urges and thoughts related to gambling and greater interference and distress as compared to gamblers without comorbid impulse control disorder. In another previous study conducted by Black and Moyer (1998), the rate of impulse control disorders comorbidity among pathological gamblers were found to be higher as compared to Grant and Kim's (2003) research. Their assessment revealed that 43% of the pathological gamblers had at least one impulse control disorder. Compulsive buying and compulsive sexual behavior were found to be the most common among pathological gamblers similar to Grant and Kim's (2003) findings with additional intermittent explosive disorder.

Commonality of depressive symptoms among pathological gamblers is evident in many related research (e.g., Black & Moyer, 1998; Cunninghan-Williams, Cottler, Compton, & Spitznagel, 1998; Scherrer et al., 2007; Stuhldreher, Stuhldreher, & Forrest, 2007; Voldberg et al., 2006; Wiebe, Cox, & Falkowski-Ham, 2003b). Wiebe and colleagues (2003b) reported that the severity of gambling problems was associated with the likelihood of feeling depressed or down. According to Black and Moyer's (1998) research, half of the pathological gamblers sample had current major depressive disorder. According to Johansson and colleagues' (2009) critical literature review, depression was reported as one of the probable pathological gambling risk factors. According to Ibanez and colleagues' (2001) research conducted with sixty nine treatment-seeking pathological gamblers, those with comorbid disorders scored significantly higher than gamblers without comorbid disorders on the State-Trait Anxiety Inventory and the Beck Depression Inventory even after patients with comorbid anxiety and mood disorders were excluded from the analysis. Problem and pathological gambling were also found to be significantly correlated with higher rates of both past year and life time depression according to Voldberg and his colleagues' (2006) research.

The temporal relationship between pathological gambling and depressive symptoms is complicated in spite of the well-established associations between the two. For instance, although Kim and colleagues' (2006) evaluation reported that both gambling to escape from depressive symptoms and suffering depression due to gambling related problems are possible, they concluded their review of the relevant literature stating that depressive symptoms seemed to be secondary following

pathological gambling. They proposed that many individuals developed depressive symptoms as a result of gambling. It was also reported that gambling preceded depression in 86% of cases in treatment-seeking gamblers with a diagnosis of major depression according to the results of McCormick, Russo, Ramirez and Taber's research findings (1984). On the other hand results of Hodgins, Peden, and Cassidy's (2005) research revealed that occurrence of depression both before and after development of gambling problems were likely. Although limited in number, these reports are vital, because discussions with respect to the direction issue of the relationship between depressive symptoms and gambling are controversial; in other words whether gambling leads to depressive symptoms or depressive symptoms lead to gambling to avoid negative emotions is complicated.

The association between excessive gambling and self harm also interested some of the researchers in the field. There are studies that report the association of suicidal thoughts and attempts with pathological gambling (e.g., Newman & Thompson, 2007; Petry & Kiluk, 2002). In a national survey conducted in Canada with a large sample of 36984 participants, past year pathological gambling was found to be associated with past year attempted suicide although the authors underlined that a causal relation could not be concluded from their data due to its cross-sectional nature (Newman & Thompson, 2007). Petry and Kiluk (2002) conducted a study with a sample of 342 pathological gamblers seeking treatment in which they compared gamblers in 'no suicidal ideation', 'suicidal ideation', and 'suicide attempters' groups. Almost half (49%) of the sample was either in suicidal ideation or suicide attempters groups. Petry and Kiluk (2002) concluded that their data

confirmed the high suicidality reported in gambling literature and in relation attracted attention to the necessity of more focused and intense treatments in pathological gamblers with suicidality. According to Voldberg and colleagues' (2006) research findings, reports of suicidal thoughts and suicidal attempts were found to be higher among problem and pathological gamblers as compared to low-risk and at-risk gamblers. In another study conducted with 1079 university students with a mean age of 19.9 years, the rate of considering or attempting suicide was reported to be as twice in participants with gambling problems as compared to participants who did not report gambling problems (Stuhldreher, Stuhldreher, & Forrest, 2007). These reports of self harm may be considered as the signs of helplessness feelings which do not seem to be rare among gamblers.

In a recent research, associations of gambling with positive and negative mood states were examined by Matthews, Farnsworth, and Griffiths (2009). Matthews and colleagues (2009) reported that negative mood states both after gambling and in general were significant predictors of problem gambling according to their research findings conducted with online gambler students sample. Their other analyzed predictor variables which were positive mood states categorized in terms of 'generally', 'while gambling', and 'directly after gambling' did not predict problem gambling together with the negative mood state of 'while gambling' category. Implication of this study was reported as its support to theories that evaluated gambling as an escape-based coping strategy by some researchers (e.g., Wood & Griffiths, 2007).

The association between gambling severity and emotional distress with a similar content of negative mood state mentioned above together with depression, loneliness, life events and social support as social and psychological factors were investigated in Wiebe and colleagues' (2003b) longitudinal study. It was reported that the decrease in social support together with the increase in levels of depression, distress, loneliness, and life events were significantly associated with gambling severity. However, when gambling severity scores of the previous year were entered in the hierarchical regression analysis, only the emotional distress among the other psychological and social factors predicted increases in gambling severity over-and-above the previous year gambling severity scores. Wiebe and colleagues (2003b) concluded that gambling could be a self-medication type of emotional distress. Self-medication related role of gambling is also expressed by various researchers (e.g., Bonnaire et al., 2009).

Research with respect to association of gambling behavior with alcohol and substance use, abuse, and dependence is also significantly widespread in gambling literature. Stewart and colleagues (2008) suggested that gambling and alcohol association may be due to common underlying motives for engaging in these activities. Kessler and colleagues (2008) reported that odds-ratios of lifetime pathological gambling were strongest with substance use disorders rather than other impulse-control disorders. According to the results of el-Guebaly and colleagues' (2006) research with 14934 respondents, the risk of moderate/high severity of gambling category was found to be 2.9 times higher in people with substance dependence or harmful alcohol use respectively as compared to non-problem and low

severity gambling categories. In another research conducted by Kruedelbach and colleagues (2006) substance related disorders, in which alcohol dependence was the most prevalent one, were found to be frequent associates of pathological gambling in a sample of 162 pathological gamblers admitted for treatment. Drinking when gambling was also found to be associated with the size of bet, obtaining additional money, and loosing more than one can afford for male university students sample gambling at casino (Giacopassi, Stitt, & Vandiver, 1998). Johansson and colleagues (2009) reported that alcohol abuse was a probable pathological gambling risk factor whereas drug abuse was a well-established pathological gambling risk factor according to the results of their review. Although the replication study (Bondolfi et al., 2008) did not support the previously established association, the results of the 1998 study (Bondolfi et al., 2001) carried with Swedish participants showed a clear correlation between gambling behaviors and alcohol abuse. According to the research findings of Welte and colleagues (2004), only alcohol abuse/dependence predicted pathological gambling symptoms among the other variables of alcohol use, drug use / abuse / dependence, and number of crimes committed in the past year, after the influence of number of gambling types, gambling frequency and quantity of gambling are controlled. Problem and pathological gamblers were found to be more likely than others in the population to smoke, drink, and use drugs according to Voldberg and colleagues' (2006) research. However the researchers reported that most problem and pathological gamblers did not smoke (29% smoke daily), drink often (15% drink a week or often) or use drugs (6% has used illicit drugs in the past year). Similarly, Petry (2007) reported that most of the participants reported no

illegal drug use in the past month according to her research with 231 pathological gamblers. Overall, alcohol use, abuse and dependence (e.g. Ibanez et al., 2001; Petry, Stinson, & Grant, 2005; Welte, Barnes, Wieczorek, Tidwell, & Parker, 2001), tobacco smoking (e.g., McGrath & Barrett, 2009; Petry & Oncken, 2002; Petry, Stinson, & Grant, 2005; Rodda, Brown, & Phillips, 2004), substance use disorders (e.g., Black & Moyer, 1998), substance abuse disorders (e.g., Shaffer et al., 1999) among pathological gamblers is evident in various studies.

### 1.6 Psychological Predictors of Gambling

Tavares and colleagues (2003) ask a question especially critical within the scope of the present study concerning the association between gambling and cognitive distortions: why do some individuals act upon their false beliefs as opposed to others, although both problem and nonproblem gamblers have distortions? To investigate the differences of gambling related cognitions (if there is) according to gambling severity of the individuals both in quantitative and qualitative means is one of the purposes of the present study. The content of the cognitions are central in the development of psychopathology according to cognitive model and important part of the treatment is to work on the validity and utility of that content according to cognitive therapy (Beck, 1976). Although lacking sufficient empirical support, research findings suggest that gambling-related cognitions were more common among problem gamblers as compared to non-problem gamblers (e.g. Joukhador, Maccallum, & Blaszczynski, 2003; Raylu & Oei, 2004b). Moreover the association

between gambling intensity and gambling related cognitions is established according to results of several studies (e.g., Delfabbro & Winefield, 2000; Miller & Currie, 2008). In this context, addressing cognitive distortions about gambling as essential part of cognitive therapy may provide with beneficial outcomes in the treatment of pathological gamblers (Tavares et al., 2003).

Personality is one of the most commonly researched associates of psychopathology in general. In the context of gambling, personality is proposed as a risk factor in the development of pathological gambling due to the fact that not all individuals who gamble develop this disorder (Bagby et al., 2007). In spite of differences in measurement scales to assess personality features of gamblers and inconsistencies with respect to research findings, high neuroticism scores seem to be a common personality dimension as associate of gambling severity (e.g., Blaszczynski, Buhrich, & McConaghy, 1985; Kaare, Mottus, & Konstabel, 2009). In fact association of gambling severity and neuroticism is not surprising since the mentioned dimension of personality is also proposed as the associate of psychopathology in general with highest effect size among other personality dimensions in a recent meta-analysis conducted by Malouff, Thorsteinsson, and Shutte (2005). The relationship of gambling and personality is discussed in more detail below with respect to the relevant research findings.

Motivation to gamble is one of the other important variables that play an important role within the possible etiological pathways of gambling behavior according to related research findings as discussed in more detail below. The research with respect to gambling motives trails drinking motives literature in terms

of both chronology and content. For instance, Gambling Motives Questionnaire of Stewart and Zack (2008) was adapted from Drinking Motives Questionnaire (Cooper, Russell, Skinner, & Windle, 1992) with very minor modifications. Most of the labels and content used to define the gambling motives such as socialization, coping/avoidance, enhancement/amusement, and excitement are very similar to the drinking motives. This contextual bond between gambling and drinking within the frame of motives also necessitate the comprehension of drinking motives to direct research of gambling motives and to discuss the findings with respect to possible similarities and dissimilarities. Thus motives for drinking alcohol are also presented and discussed in detail in this section due to the bond between motives to drink and to gamble.

### 1.6.1 Cognitive Factors

Consistent errors in thinking and negative biases in the cognitive processing are central in the general psychopathology conceptualization of the cognitive theory (Beck, 1976). Identifying cognitive distortions is important in evaluating the validity and utility processes of the individuals' thoughts. Research identifying gambling-related cognitions (e.g., Gilovich & Douglas, 1986; Gaboury & Ladouceur, 1989) followed by studies reporting that the problem gamblers have more gambling related cognitions as compared to the non-problem gamblers or gambling-related cognitions were associated with the gambling severity (e.g., Delfabbro, Lambos, King, Puglies, & 2009; Jefferson & Nicki, 2003; Joukhador, Maccallum, & Blaszczynski, 2003;

Moodie, 2008; Oei, Lin, & Raylu, 2007), were important for the idea that these cognitions may play a role in the initiation and maintenance of gambling (Raylu & Oei, 2004b; Sharpe, 2002). Attempts to develop measurement tools to assess the distorted cognitions in gambling (e.g., Jefferson & Nicki, 2003; Raylu & Oei, 2004b) gained importance due to the hypothesized central role of distorted cognitions in the etiology of gambling especially within the frame of cognitive therapy.

In spite of the attempts to assess the gambling-related cognitions of the individuals and research establishing associations of those cognitions with gambling severity as discussed in detail below, there is not a consensus in the literature about how should the construct, content, or subscale labeling of those assessment instruments be formulated. Moreover the sample compositions of the validation studies for those instruments are also different from each other. Gambling Attitudes and Beliefs Scale (Breen & Zuckerman, 1999), Informational Biases Scale (IBS; Jefferson & Nicki, 2003), Gambling-Related Cognitions Scale (GRCS; Raylu & Oei, 2004b), and Gambling Belief Questionnaire (Joukhador, MacCallum, & Blaszczynski, 2003) are some examples of those various instruments developed to investigate erroneous gambling cognitions. For instance the data of IBS (Jefferson & Nicki, 2003) was from video lottery terminals players and the factor analysis revealed a one factor solution for the scale labeled as denial of the independence of trials on video lottery. On the other hand the data of GRCS (Raylu & Oei, 2004b) was from a more heterogeneous sample with respect to the gambling preferences and the factor analysis revealed a five factor solution (gambling expectancies, perceived inability to stop gambling, illusion of control, predictive control, interpretative bias).

The factor structures of those scales are inevitably related to the content of the items at one hand, and the sample composition (socio-demographics, gambling preferences, gambling participation, gambling severity of the participants) of the validation study on the other hand. From this perspective, it is not convenient to comparatively approach to the findings of the studies with respect to the gambling cognitions roughly disregarding the content of the scale items.

In spite of the mentioned variations in the assessment of gambling cognitions and dependent difficulties in comparing the results of the various research, those research usually yield promising findings to keep on examining those cognitions as important associates of gambling problems, although some contradictory findings are also reported. To start with the contradictory results; Cloutier, Ladouceur, and Sevingy (2006) did not find the existence of the relationship between gambling intensity and gambling cognitions. Coups, Haddock, and Webley (1998) reported that correlation between perceived illusion of control and the amount of lottery play was not significant at .05 level. Moreover, Shead, Callan, and Hodgins (2008) reported that problem gamblers did not have a more tendency towards risky decisions as compared to non-problem gamblers. On the other hand, Johansson and colleagues (2009) concluded that erroneous perceptions such as superstitious beliefs or probability computation errors and illusion of control suggesting inappropriate confidence in personal success while gambling were well established risk factors for pathological gambling according to the results of their review. Raylu and Oei (2004b) reported that probable problem gamblers scored higher on gambling expectancies, perceived inability to stop gambling, illusion of control, predictive

control, interpretative bias subscales of gambling-related cognitions as compared to non-problem gamblers. Gambling intensity in terms of gambling expenditure computed with respect to the annual household income was predicted by irrational gambling cognitions and risky gambling practices according to the results of Miller and Currie's (2008) research. Delfabbro and Winefield (2000) reported that gambling expenditure of people in gambling sessions with irrational gambling cognitions were larger as compared to the individuals without those cognitions. The correlation coefficient between the informational biases and gambling severity scores were found as high as .48 according to the results of Jefferson and Nicki's study (2003). Moodie (2008) reported that erroneous gambling beliefs including coping, personal illusory control, and general illusory control of the probable pathological gamblers were significantly higher than problem and non-problem gamblers.

The above findings are especially important for cognitive therapy, since those cognitions present a concrete content to evaluate in the therapy session. In this context, addressing cognitive distortions about gambling is an essential part of cognitive therapy (Tavares et al., 2003). Identification and modification of cognitive distortions such as illusion of control over gambling outcomes and biased memories in regard to past wins and losses together with gaining new skills to control gambling are some of the essential suggested content of pure cognitive therapies of gambling related problems (Ledgerwood & Petry, 2005). In spite of limited empirical research, Cognitive Behavior Therapy (CBT) seems to propose promising findings in treatment of gambling-related problems. In a recent study conducted by Petry and her colleagues (2007), decrease in gambling participation and gambling related problems

of the pathological gamblers assigned at CBT plus Gamblers Anonymous (GA) treatment group was significantly more than the pathological gamblers assigned at GA treatment group. However, the necessity to understand the content and maintaining input of the gambling related cognitions is obvious in order to understand the effect of those cognitions and to tailor the treatment dependently.

### 1.6.2 Personality Factors

Personality globally defined as characteristic patterns of behaviors, feelings, and thoughts over time and at varying situations (Connor-Smith & Flachbart, 2007) is one of the commonly studied variables associated with psychopathology in general (e.g., Malouff, Thorsteinsson, & Shutte, 2005; Ormel, Rosmalen, & Farmer, 2004) and pathological gambling in specific (e.g., Bagby et al., 2007; Blaszczynski, Wilson, & McConaghy, 1986; Slutske, Caspi, Moffitt, & Poulton, 2005; Vachon & Bagby, 2009). According to Malouff, Thorsteinsson, and Shutte's (2005) meta-analysis, overall results that examined the relationship between five-factor model of personality and clinical disorders symptoms, a typical five-factor profile of high neuroticism, low conscientiousness, low agreeableness, and low extraversion was found to be associated with symptoms of different clinical disorders. The effect size for neuroticism was high, medium for conscientiousness, and low for extraversion and agreeableness. Thus especially neuroticism seems to be a vulnerability factor for psychopathology in general. On the other hand especially high neuroticism was also found to be associated with pathological gambling in specific (e.g., Bagby et al.,

2007; Blaszczynski, Buhrich, & McConaghy, 1985; Kaare, Mottus, & Konstabel, 2009). In fact, suggested associations of gambling with neuroticism through a pattern of responding to stressful life conditions and/or emotional difficulties trace back to Moran (1970) that is more than forty years ago.

Individual differences in personality is suggested as a risk factor in the development of pathological gambling since only the minority of individuals who gamble develop this disorder (Bagby et al., 2007). Although differently defined traits together with outcome inconsistencies with respect to gambling (Bagby et al., 2007) lead to confusion, personality and gambling association is widely researched in the literature. Personality domains were usually measured either by revised NEO personality inventory (NEO PI-R) that assess five domains namely; neuroticism, extraversion, openness, conscientiousness, and agreeableness (e.g., Bagby et al., 2007; Brown & Mitchell, 2010; Vachon & Bagby, 2009) or by Eysenck Personality Questionnaire (EPQ) that assess three domains namely; neuroticism, extraversion, and psychoticism (e.g., Blaszczynski, Buhrich, & McConaghy, 1985; Blaszczynski, Steel, & Mcconaghy, 1997; Blaszczynski, Wilson, & McConaghy, 1986; Roy, Custer, Lorenz, & Linnoila, 1989).

Blaszczynski, Buhrich, and McConaghy (1985) reported that pathological gamblers and heroin addicts were not dissimilar with regard to personality features measured by EPQ according to the findings of their research in which they had compared pathological gamblers, heroin addicts, and control group. Pathological gamblers scored significantly higher than controls in neuroticism scale; however elevated psychoticism and extraversion scores as compared to controls did not yield

significant results. In another study in which again EPQ was used, treatment seeking pathological gamblers had higher scores on psychoticism and neuroticism sores as compared to general population (Blaszczynski, Wilson, & McConaghy, 1986). According to the results of another study in which the sample size was limited to only thirty seven individuals, pathological gamblers had significantly higher sores of psychoticism and neuroticism scores on the EPQ as compared to the controls (Roy, Custer, Lorenz, & Linnoila, 1989).

Pathological gamblers scored significantly higher on neuroticism scale and significantly lower on conscientiousness scale as compared to nonpathological gamblers in Bagby and colleagues' (2007) research measured by NEO PI-R. It was reported that pathological gamblers scored significantly higher on facet traits of depression, self-consciousness, and vulnerability within the domain of neuroticism and on facet traits of competence, dutifulness within the domain of conscientiousness as compared to non-pathological gamblers. One possible explanation suggested by Bagby and colleagues (2007) for the development of gambling was that the gambler in a maladaptive fashion tries to regulate affect or dampen the effects of high neuroticism prior to conditioning of gambling behavior.

According to results of Vachon and Bagby's (2009) research findings conducted with 222 non-treatment seeking participants, cluster analysis revealed three subgroups of pathological gamblers based on personality facet subscales measured by NEO-PI-R. It was reported that 'simple pathological gambling' cluster was described by normative trait scores and lacked Axis I and Axis II psychopathology whereas 'hedonic pathological gambling' cluster was described by

inclination for excitement seeking, positive affect and presence of moderate rates of comorbid psychopathology as compared to high rates of psychopathology of 'demoralized pathological gambling' cluster described by inclination of negative affect, low positive emotionality and disinhibition. According to the results of another study conducted by Slutske, Caspi, Moffitt, and Poulton (2005) in a non-treatment seeking sample with 939 participants, higher negative emotionality (such as nervousness or worry, anger, aggressiveness, etc.) and lower behavioral constraint (such as risk-taking, impulsivity, and rebelliousness) measured at age eighteen was found to be associated with problem gambling measured at age twenty-one. The authors argued that those were enduring trait-like personality risk factors rather than being acute state-like reactions related with gambling problems due to the fact that they had measured personality and problem gambling on three years interval. The authors reported that the individuals who had high negative emotionality scores had a lower threshold for the experience of negative emotions such as anxiety and danger, and tend to break down under stress. Problem gambling personality profile was reported to be similar to the profiles associated with alcohol, cannabis, and nicotine dependence according to the results of the same study.

Gambling behavior and personality disorders association is also researched. Twenty six subjects (87%) met criteria for at least one personality disorder according to Personality Diagnostic Questionnaire according to research findings of Black and Moyer (1998). In another research in relation to pathological gambling and personality disorders association, especially cluster B personality disorder features, described as impulsive group, were found to be more common among pathological

gamblers (Kruedelbach et al., 2006). According to Nordin and Nylander's (2007) research findings, a personality disorder was found in 29% of thirty-eight pathological gamblers. Harm avoidance and novelty seeking were evaluated as potential trait-like characteristics of the pathological gambler in the same study. Pietrzak and Petry (2005) reported that 16.5% of 237 pathological gamblers entering a treatment for gambling problems met diagnostic criteria for antisocial personality disorder. Personality disorders were also considered as probable pathological gambling risk factor in Johansson and colleagues' (2009) critical literature review.

### 1.6.3 Motivational Factors

It is important to understand the probable antecedents and possible etiological pathways of gambling behavior. Motivation to gamble is one of the important dimensions within this respect. Organisms' major motivations are proposed to enhance positive affect and reduce negative affect (Cox & Klinger, 1988). This view can be adapted to the gambling behavior of the individuals as the expected enhancement of positive affect and/or reduction of negative affect as a consequence of gambling behavior probably outweighs the expected enhancement of positive affect and/or reduction of negative affect as a consequence of non-gambling behavior as Cox and Klinger (1988) suggested for alcohol drinking.

The research with respect to gambling motives trails drinking motives literature in terms of both chronology and content. Petry (2009) states that gambling literature is 20-30 years behind the alcohol literature. Thus, it is new as compared to

research of drinking motives with respect to chronology at one hand. On the other hand, the mentioned following in content necessitates comprehension of drinking motives to direct gambling motives research with respect to similarities and dissimilarities. The consensus on classification of drinking motives rests on two dimensions which depends on either expected effects of change in mood (enhance positive mood or avoid negative experiences) or the source of the expected changes which can be internal (regarding the personal affective change) or external (regarding the individual social environment) (Kuntsche, Knibbe, Gmel, & Engels, 2005). The outcome is four categories of drinking motives which are; drinking to enhance positive mood (enhancement: positive, internal), to reduce negative emotions (coping: negative, internal), to attain social rewards (social: positive, external), and to avoid social rejection (conformity: negative, external) that depend on valance (positive or negative reinforcement) and source (internal or external) (Cox & Klinger, 1998; Cox & Klinger, 2000).

Alcohol abuse and dependence literature suggests that alcohol consumption is related with psychologically distinct behaviors with distinct functions depending on underlying motives rather than being a unitary phenomenon (e.g., Cooper, Frone, Russell, & Mudar, 1995). It was proposed that predisposing individual features such as emotions and expectancies were important within the limits they affect specific drinking motives since the final and common pathway to alcohol use and dependence was 'motives' (Cox & Klinger, 1988). Cox and Klinger (1988) state that incentive motivation is an important part of the organism's psychological functioning. Cooper and colleagues (1995) suggest that regulation of positive emotions and negative

emotions is central motivational processes that are distinct rather than being opposite ends of the same continuum. Their model shown in Figure 1 suggests that drinking to cope motive is to decrease negative emotions whereas drinking to enhance motive is to increase positive emotions. They propose that each pathway has unique and distinct antecedents and consequences. The authors' expectancy for coping motive to end up with drinking problems was stronger as compared to enhancement motive due to empirical and theoretical justifications. They hypothesized that individuals should have greater personal control over their drinking when they used alcohol to enhance positive emotions.

Cooper and colleagues' (1995) statistical analysis revealed empirical support for their hypothesized model with the exception that avoidance coping did not predict coping motives. Coping motives were predicted by both tension reduction expectancies and negative affect and predicted both alcohol use (measured by frequency and amount) and drinking problems. Enhancement motives predicted by enhancement expectancies and sensation seeking in turn mediated alcohol use but not drinking problems directly. Some of the participants reported that they had drank for both enhancement and coping suggesting that the motive for drinking could depend on the situation rather than being trait-dependent. In fact positive correlation between different motives is evident in other research in drinking literature (e.g. Labouvie & Bates, 2002). Cooper and colleagues' (1995) research findings supported the notion that underlying motives was important both for conceptualization and operationalization of possible pathways of dependent behavior and for selection of alternative intervention strategies.

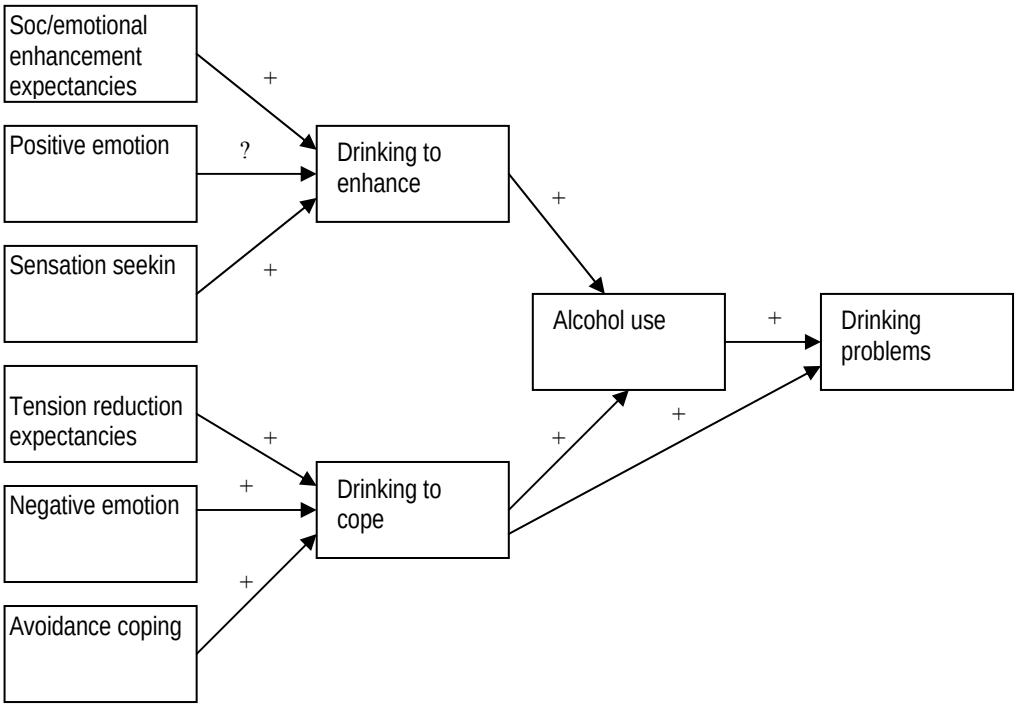


Figure 1. *Cooper, Frone, Russell, and Mudar's (1995) hypothesized model of alcohol use as an emotion management strategy*

Motives began to be researched in gambling literature relatively recently (e.g., Lee, Chae, Lee, & Kim, 2007; Stewart & Zack, 2008; Stewart et al., 2008). Gambling motives have similar content to that of drinking motives in spite of variations in taxonomy. Gambling to enhance, to cope, to socialize (Stewart & Zack, 2008); or gambling for socialization, amusement, avoidance, excitement, and monetary motives (Lee, Chae, Lee, & Kim, 2007); or intrinsic motivations of knowledge, accomplishment, stimulation and extrinsic motivations of identified regulation, introjected regulation, external regulation (Chantal, Vallerand, & Vallieres, 1994) are some examples of gambling motives suggested in the literature. This diversity and conceptual complexity of motives is also evident in drinking

literature. For instance, Kuntsche and friends (2005) reported numerous labels found in the area for item batteries measuring drinking to cope, escape, avoid, or regulate unpleasant emotions in their related literature review. According to the review of Kuntsche and colleagues (2005) the difficulty is not only limited to different labels of the similar content but same labels also have dissimilar content.

In spite of the complexity with respect to gambling motives mentioned above, there are some commonalities in those motives specified within the frame of gambling behavior. With respect to excitement seeking, Bagby and colleagues (2007) suggested that it might be associated with gambling behavior rather than pathological gambling due to their research results finding no difference on excitement-seeking between pathological and non-pathological gamblers. The analysis of Gambling Motives Questionnaire adapted by Stewart and Zack (2008) modeled after Drinking Motives Questionnaire (Cooper et al., 1992) revealed that probable pathological gamblers scored higher than non-pathological gamblers on coping, enhancement, and socialization motives subscales. Larger differences were reported for coping and enhancement as compared to socialization subscale. No association was found between social gambling motives and gambling behavior or gambling problems. Probable pathological gamblers reported that they gambled to win money, to distract from everyday problems together with for entertainment and excitement significantly more than non-problem gamblers according to the results of Cox and colleagues' (2000) research conducted with a random sample of 738 adults in Canada. Wood and Griffiths (2007) reported that the central reason to gamble was to 'escape' although the gamblers realized that it was not a real solution to their long-

term problems based on the qualitative analysis of fifty problem gamblers. They proposed that the maintenance of gambling behavior was through an ongoing desire to escape a negative mood state. According to the results of Gupta and Derevensky's (1998) research, the most dramatic increase among gambling reasons across gambling severity groups were for the reason of escaping one's problems and alleviating feelings of depression. The reason to escape one's problems for gambling increased from 1.5% among occasional gamblers to 20% among problem and pathological gamblers. The association of gambling and avoidance is also reported in different studies (e.g., Nower, Derevensky, & Gupta, 2004; Wiebe, Cox, & Falkowski-Ham; 2003b).

Stewart, Zack, Collins, Klein, and Fragopoulos' (2008) analysis revealed three groups of gamblers based on 158 participants' scores on Inventory of Gambling Situations validated by Gambling Motives Questionnaire. The groups were named enhancement gamblers (gambling purely for positive reinforcement, 59% of the sample), coping gamblers (gambling both for positive and negative, but mainly for negative reinforcement, 23% of the sample), and low-emotion regulation gamblers (gambling for reasons other than direct affect modulation, 18% of the sample) in respect to affect regulation expectancies due to their gambling. The researchers suggested that the coping group could also be conceptualized as high emotion regulation gamblers since no pure coping-motivated gambler was identified. The group comparison analysis revealed that coping gamblers scored significantly higher on gambling frequency, number of gambling activities and gambling problems dimensions as compared to low-emotion regulation gamblers and higher on gambling

frequency and gambling problems dimensions as compared to enhancement gamblers. On the other hand, enhancement gamblers scored higher on number of gambling activities and gambling related problems as compared to low-emotion regulation gamblers, however these groups did not differ on gambling frequency. Overall, coping gamblers seemed to gamble more frequently and to prefer more activities and as a result to have more gambling-related problems. The researchers concluded that their findings support empirical evidence for the view that motives to decrease or avoid negative states may result in dependence on the addictive activity. Additionally coping gamblers drank more frequently and had more severe drinking problems as compared to both enhancement and low-emotion regulation gamblers. In relation the authors stated that motives may be more commonly characterized traits that have influence across various addictive behaviors supported by their finding of co-occurrence of high gambling and drinking related problems for coping motivated participants.

In fact association of coping and addictive behavior related problems is not limited to gambling behavior; for instance other evidence is also present in coping and alcohol and/or substance use association (e.g., Mcnally, Palfai, Levine, & Moore, 2003; Simons, Correia, & Carey, 2000). Moreover alcohol drinking motive literature suggests that the associations of enhancement motives and alcohol related problems is likely to decrease or vanish, when coping motives are controlled (Kuntsche et al., 2005). Kuntsche et al.'s (2005) study reviewing drinking motives of young people suggested that social, enhancement, and coping motives were related with moderate alcohol use, with heavy drinking, and alcohol-related problems

together with heavy drinking respectively in spite of the fact that majority reported social, some reported enhancement, and only minority reported coping motives to drink. According to the results of one of the studies conducted in Turkey, coping motive significantly predicted frequency, amount, and hazardous alcohol use after controlling the effects of demographics, depression, and anxiety sensitivity in an university students sample (Çakmak, 2006). In relation Stewart, Loughlin, and Rhyno (2001) proposed that especially neurotic individuals drank alcohol to avoid or escape negative affect states as a way of coping strategy to deal with their negative affect supported by their research findings. Another supportive empirical research finding with regard to a common motive influencing across various addictive behaviors was from the research of Stewart, Brown, Devoulyte, Theakston, and Larsen (2006). The researchers reported that binge-eaters concurrently drank more often either for emotional relief purposes or emotional reward achievement purposes.

The research with respect to drinking motives is ahead studying also on the association between drinking motives and personality. The related drinking literature will be a model for the present study since the associative effect between gambling motives and personality on gambling severity will be examined as a part of the present research. Thus, a slight overview of the related drinking literature is presented in this section with respect to the associations of drinking motives and personality features. Drinking motives are distinguished on the basis of personality domains although minor contradictory findings are present. For instance, Stewart and Devine (2000) reported that coping motive for drinking was predicted by high neuroticism whereas enhancement motives for drinking was predicted by high

extraversion and low conscientiousness. In spite of their findings, Stewart and Devine (2000) consider the possibility that associations seemingly between neuroticism and coping motives and between extraversion and enhancement motives might be better explained by affect (negative and positive affect) than by personality (neuroticism and extraversion). Prior research suggests an association between negative affect and neuroticism; positive affect and extraversion (Watson & Clark, 1992). Stewart and Devine (2000) state the importance of inclusion of positive and negative affect together with personality domains in prediction of motives with respect to drinking in order to examine the relative contributions of personality domains and affect for further research. This suggestion is essential within the scope of the present study since both variables are used in prediction of gambling severity.

Stewart, Loughlin, and Rhyno's (2001) mediator regression analysis results revealed that high neuroticism and increased drinking problems association was partially mediated by coping motives whereas low conscientiousness and increased drinking quantity was mediated by enhancement motives. Two external motives namely social and conformity were not significantly predicted by personality dimensions in the sample of university students of the mentioned research. In another study by Theakston, Stewart, Dawson, Knowlden-Loewen, and Lehman (2004) again coping motives were predicted by low emotional stability scores and enhancement motives were predicted by high extraversion and low conscientiousness scores. According to the research findings of Loukas, Krull, Chassin, and Carle (2000) conducted with young adults of ages between 18 and 26, it was reported that higher coping motives to use alcohol were associated with high neuroticism, low

conscientiousness, and low agreeableness whereas higher enhancement motives to use alcohol were associated with low conscientiousness. Another study, in which dependent variables were risky sex together with alcohol use (Cooper, Agocha, & Sheldon, 2000), revealed similar results with the mentioned ones. Neurotic individuals engaged in risky behaviors as a way to cope with aversive mood states whereas extraverted individuals engaged in risky behaviors as a way to enhance positive affect experience according to the results of the mediational analysis.

Monetary concerns with respect to gambling constitute important deviating dimension of gambling motives as compared to drinking motives as discussed and empirically supported in the related literature (e.g., Dechant & Ellery, 2011; Hodgings, 2008; Neighbors, Lostutter, Cronce, & Larimer, 2002). For instance to win big money (83%) and to make money (59%) were common reported reasons to gamble in a study conducted with 7756 participants in Britain (Wardle, Moody, Spence, Orford, Voldberg, Jotangia et al., 2011). According to the results of Wiebe, and colleagues' (2003b) research, the respondents who displayed elevations in gambling severity study in the one year follow-up were most likely to view money as a solution to their problems and to gamble to escape problems. Wulfert and colleagues (2008) concluded that the excitement of gambling was tied to the expectancy of winning money in their controlled experimental design in which increased heart rates were reported as a result of wagering. In a study conducted in Korea by Lee, Chae, Lee, and Kim (2007); socialization, amusement, avoidance, excitement, and monetary motives were derived from the study for gamblers. Interestingly, the authors suggested that amusement, avoidance, excitement motives

influenced gambling severity only through mediation of the monetary motive according to their findings. In one of the very few studies conducted in Turkey, approximately 65% of the pathological gamblers in the sample stated that they saw gambling as a way to solve their financial problems (Duvarcı & Varan, 2000). With respect to gambling to win money, it was reported that the experience itself was the reason to gamble for individuals who were in later stages of gambling addiction whereas winning money to solve financial difficulties was more central motive for the ones who were in earlier stages of gambling addiction (Wood & Griffiths, 2007). In other words chasing losses was more common early on in the problem gambling process. In another study conducted with relapsed pathological gamblers while attempting to quit gambling, optimism about winning and the need to win money were found to be most frequently reported relapse causes (Hodgins & el-Guebaly, 2004). Interestingly, financial concerns were also the most often reported response together with negative emotions as the reason for quitting gambling (Hodgins, Makarchuk, el-Guebaly, & Peden, 2002). In connection it is suggested that financial management and debt counseling must also be included in gambling treatment strategies (Nower & Blaszczynski, 2006).

### 1.7 Models of Gambling Behavior

One of the approaches to understand gambling behavior is a typological research that attempts to differentiate among gamblers (e.g., Balazs, Kun, & Demetrovics, 2009; Blaszczynski & Nower 2002; Faregh & Leth-Steensen, 2011).

Milosevic and Ledgerwood (2010) propose several theoretical and clinical implications of valid subtyping models of pathological gamblers. They suggest that in addition to improvements in understanding the etiology and course of the disorder, determination of possible psychopathological, personality, and motivational differences among subtypes will aid to develop both suitable assessment measures and treatment options for different subtypes. The view that underlines the necessity of tailoring treatment for different subgroups of pathological gamblers due to empirically derived taxonomy of pathological gamblers is shared by researchers in the gambling literature (e.g., Vachon & Bagby, 2009; Shed & Hodgins, 2009). Implications of understanding pathological gambling through subtyping models may exceed the benefits of better treatment options but also add on the empirical accumulation of gambling etiology as discussed in the gambling literature (e.g., Milosevic & Ledgerood, 2010).

In fact, empirical research that compares treatment outcomes of different subgroups of pathological gamblers is very limited in number. Ledgerwood and Petry (2010) investigated that participants of 229 treatment-seeking pathological gamblers of three subtypes of pathways (behaviorally conditioned, emotionally vulnerable, and antisocial impulsivist) based on Blaszczynski and Nower's (2002) classification differed on some baseline characteristics. However, according to the results of the same study, being a member of those subtypes did not predict treatment outcomes beyond gambling severity measured at baseline. The authors suggested that antisocial impulsivist and emotionally vulnerable gamblers may need more intense treatment as compared to behaviorally conditioned gamblers, because first two

groups may have greater gambling problem severity at baseline. As far as known this is the only study that tried to investigate the treatment outcome based on Blaszczynski and Nower's (2002) pathways model up to now, that is why it may be rather early to generalize Ledgerwood and Petry's (2010) findings.

Either depressed or understimulated gamblers taxonomy of McCormick (1987), or neurotic or impulsive gamblers taxonomy of Blaszczynski, Steel, McConaughy (1997) are some older examples of this approach within the historical context. For instance Moran's (1970) clinical classification of gamblers based on his view of pathological gambling as a heterogeneous syndrome is rather older. Moran (1970) proposed that although excessive gambling is common among gamblers, underlying etiological and motivational factors differ. He classified five distinct varieties of gambling, namely; impulsive, subcultural, neurotic, psychopathic, and symptomatic based on a survey of 50 male patients. According to the results of a recent literature review by Milosevic and Ledgerwood (2010), it is concluded that three distinct subtypes of pathological gamblers emerge based on motivations to gamble, psychopathological presentation, and personality. The first group is characterized by emotional vulnerability / neuroticism and gambling motivation to escape / regulate dysphoric moods. The second group is characterized by increased impulsivity and gambling motivation to increase levels of arousal and/or decrease boredom. Third group is characterized by behavioral conditioning without premorbid psychopathology or maladaptive personality traits with gambling motivation due to external factors such as social pressure. Milosevic and Ledgerwood (2010) note that these groups are not necessarily mutually exclusive illustrating that an impulsive

gambler may develop depressive symptoms and continue to gamble to cope with sadness. As it is attempted to be outlined, efforts to classify gamblers based on their features are important part of gambling research although empirical research is limited. One of those classification models is presented below in more detail due to its referential importance in the gambling literature.

### 1.7.1 A Pathways Model of Problem and Pathological Gambling

Blaszczynski and Nower (2002) criticize the attempts to study gamblers as a homogenous group and suggest three different pathways of problem and pathological gambling as shown in Figure 2. According to their integrated model of gambling, ecological factors influenced by increased availability and increased accessibility of gambling; learning processes through classical and operant conditioning; habituation; chasing and losing more than expected are the major processes constructing the first pathway of problem and pathological gambling. The second pathway is hypothesized by addition of emotional and biological vulnerability factors to pathway 1, and the third pathway is hypothesized by addition of impulsivist traits to pathway 2. Blaszczynski and Nower (2002) define emotional vulnerability construct by childhood disturbance and personality, mood disturbance, and poor coping/problem solving skills. Biological vulnerability construct is composed of biochemical and cortical influences. Finally impulsivist traits of the problem and pathological gamblers which are essential in pathway 3 are neuropsychological in nature conceptualized as Attention Deficit and Hyperactivity Disorder and impulsivity.

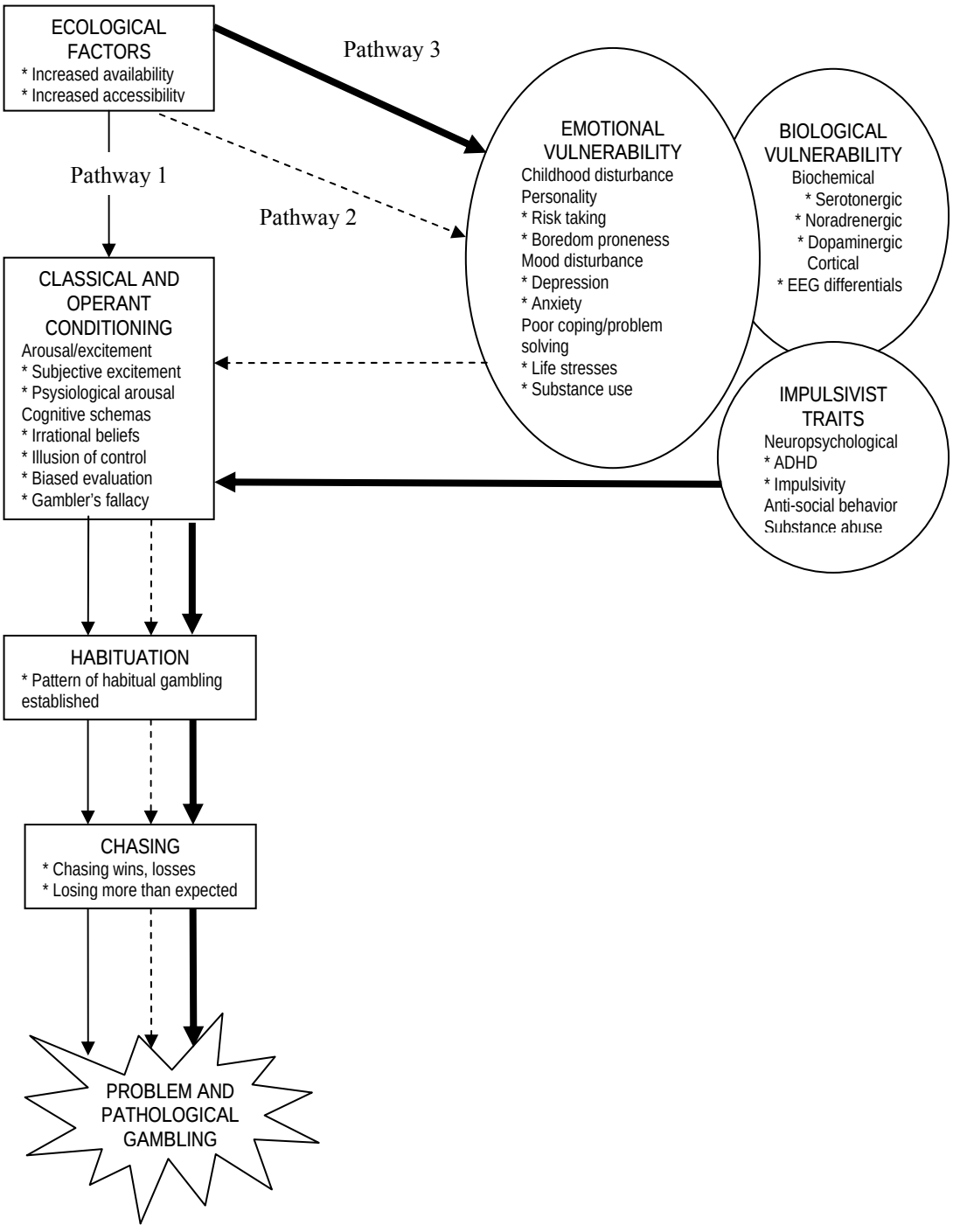


Figure 2. *Blaszczynski and Nower's (2002) integrated model of problem gambling*

## 1.8 Gambling Involvement

Gambling frequency, average amount of money invested or lost in gambling, total number of types of gambling, preferred gambling forms such as betting on sports or gambling on slot machines as correlates of pathological gambling are also examined by the researchers within the frame of gambling involvement / participation and gambling-related problems associations (e.g., Currie et al., 2009; el-Guebaly et al., 2006; Lin, Casswell, Easton, Huckle, Asiasiga, & You, 2010; Matthews, Farnsworth, & Griffiths, 2009). Rodgers, Caldwell, and Butterworth (2009) suggest that although the data of gambling participation are usually collected, the researchers are not confident in the validity of those measures and their applicability for different samples. In connection, the authors discuss that relatively few studies relate gambling participation with social, psychological, or physical wellbeing outcomes. They emphasize the necessity of utilizing gambling participation measures for benefits such as identification of risky gambling practices, evaluation of gambling-related harm, and assessment of post-treatment progress of pathological gambling. However, using different indices of gambling participation measures is a complex one. As Petry (2009) suggests; factors such as individuals' life circumstances, financial standing may differ and in connection may influence the effects of gambling participation dependently. In spite of the recent debate over necessity of measuring gambling participation and its complexity in gambling literature, a close focus on related research is essential for the hypotheses of the present study.

Petry (2003a) considers the importance of gambling participation suggesting that gambling frequency and quantity together with gambling preferences are also potentially associated with development of gambling severity and related problems along the continuum of disordered gambling. For instance findings of Faregh and Leth-Steenson (2011) contributed the authors to conclude that gambling related problems could occur along the gambling frequency continuum. The authors reported that, as the frequency of gambling increased likelihood of encountering related problems had also increased. With respect to gambling preferences Bonnaire, Bungener, Varescon (2009) reported that horse-race gamblers played for the excitement of the game to maintain high arousal as compared to other type gamblers with elevated gambling severity scores and more frequent gambling behaviors. In addition, Bonnaire and colleagues (2009) reported that the highest depression scores linked with gambling intensity were found among slot machines gamblers.

Association of gambling severity and gambling related problems seems to be one of the most commonly examined relation between gambling participation and gambling severity. For instance higher risks with respect to gambling severity were predicted as frequency of gambling had increased according to findings of el-Guebaly and colleagues' (2006) research. Similarly, gambling severity measured by SOGS increased as the gambling frequency increased measured on daily basis according to findings of Matthews, Farnsworth, and Griffiths' (2009) research. Clarke and Clarkson (2009) reported that frequency of gambling, number of activities, largest amount spent in a single session were associated with problem gambling in a sample of 104 older adults (65+ years). In relation of gambling loses

and gambling frequency, weekly gamblers (who participate in one or more types of gambling on a weekly basis) reported that they lost significantly more money than monthly gamblers (who participate in one or more types of gambling on a monthly basis) and monthly gamblers reported that they lost significantly more money than past year gamblers (who have participated in one or more types of gambling in the past year but not on a monthly or weekly basis) according to Voldberg and colleagues' (2006) research. According to Chiu and Storm's (2010) research findings, frequency of gambling was one of the strongest associates of gambling severity among various other measures such as gender, age, and impulsivity. Welte and colleagues (2004) reported that gambling frequency was found to be significantly related to gambling pathology; pathological gambling symptoms were increased by 26% with every instance of weekly gambling. Faregh and Leth-Steensen (2011) hypothesized that various game preferences and frequency of game play would compose number of clusters by the use of a nationally representative community sample data composed of 36984 individuals. The findings of Faregh and Leth-Steenson (2011) suggested that as the frequency of gambling had increased the likelihood of encountering problems also increased. They reported that not all of the members of the cluster which had highest gambling engagement (most numbers of gambles, most types of gambles) had gambling related problems although more than half of the cluster had some gambling related problems.

According to the results of el-Guebaly and colleagues' (2006) research, spending 5% or more of the household income was found to be a good indicator of moderate/high severity gambling. Severity of gambling categories was determined

by The Problem Gambling Severity Index derived from the Canadian Problem Gambling Index. In line with their findings, the researchers concluded that amount of money spent on gambling in relation to financial means, household income in this research, seemed to be a robust indicator of high risk gambling that transcended demographic and other clinical risk factors such as comorbidity. According to Petry and Mallya's (2004) research findings, both frequency of gambling and money invested in gambling differed significantly between gambling groups. Literally, Level 3 gamblers gambled more times and wagered more money as compared to Level 1 and 2 gamblers. According to Currie and colleagues' (2009) research analysis conducted with a nationally representative Canadian population sample, level of gambling participation (measured by frequency, total annual expenditure, and percentage of gross income diverted to gambling) mediated the relationship between risk potential and harm of gambling. In other words, gambling more often and investing more money in gambling resulted in increased risk of gambling-related harm. This relationship was reported as independent of demographics such as gender, age, and socio-economic status.

Pathological gamblers in Kessler and colleagues' (2008) research reported that they had participated in a larger number of different types of gambling as compared to the rest of the gamblers. Welte and colleagues (2004) reported that every additional gambling resulted in a 34% increase in the pathological gambling symptoms. Sudden increases in the symptoms were especially after five (sixth type) and eight types (ninth type) of gambling in the past year. The authors speculated that the large gambling type number might be evaluated as an indicator of an attachment

to the gambling experience essence which was explained as risking money to win money.

Although gambling activities may not be qualitatively similar to each other and may attract individuals who have different characteristics, analyzing all types of gamblers together in most research (Petry, 2003b) seems to be one of the shortages of gambling research. Dowling, Smith, and Thomas (2005) propose that the view that gambling forms are heterogeneous implies that some gambling forms are more addictive. In relation, Petry (2003b) suggests that many pathological gamblers prefer a specific gambling type and that type is most problematic to that pathological gambler. Petry (2003b) reported that most of the gamblers (95%) could identify the most problematic form of gambling listing a single gambling type when asked. The reported most problematic activity in the study was also found to be related to the most frequent gambling activity. According to the results of the same research conducted with 347 treatment-seeking pathological gamblers, it was concluded that gambling related patterns and severity varied according to the form of problematic gambling. For instance the profile of horse/dog track gambler was older, less educated men as compared to other gamblers such as sports gamblers. These individuals had both intense gambling history and psychiatric distress compared to sports, cards, slots, and scratch/lottery pathological gamblers. Horse/dog races gamblers had the highest life-time SOGS score. On the other hand, the profile of sports gambler was young male. S/he differed from horse/dog track gambler by having low levels of psychiatric distress, lower gambling amount that was measured by the estimate of last month, and lower life-time SOGS score. Reported variations

with regard to psychiatric problems differing across different gambling forms according to Petry's (2003b) study has also important implications for treatment options.

Kessler and colleagues (2008) reported that although betting on sports was one of the least popular types, both among all gamblers and pathological gamblers, it was found to be second gambling type together with horse races and gambling machines to be associated with the highest risk of pathological gambling following games that are thought to include some component of mental skill. Petry (2003b) reported that horse/dog races gamblers had the highest life-time SOGS score. Horse racing was also found to be most significantly distinguishing form of gambling between the groups of problem gamblers who reported that they had alcohol problems and who reported that they did not have alcohol use problems (Potenza, Steinberg, & Wu, 2005). Horse racing betting was found to be more common among problem gamblers who reported that they had alcohol use problems. The established association between especially horse race betting and gambling related problems according to results of Faregh and Leth-Steenson (2011) supports these findings.

## 1.9 Aims of the Present Study

The major purpose of this study is to investigate some psychological predictors of problem gambling in the Turkish sample after adapting relevant reliable and valid measurement instruments with a hope to increase the interest of the researchers in the field. Research investigating the associated features of problem and probable pathological gamblers are very limited in the Turkish culture. The only

reported reliable and valid measurement instruments are the adapted 'Turkish Form of South Oaks Gambling Screen' (SOGS; Duvarcı & Varan, 2001) and the adapted 'Gambling Motivation Scale' (Karlı, 2008). In addition, small number of participants interviewed usually in cafes (Duvarcı & Varan, 2000; Duvarcı & Varan, 2001) or special sample groups such as university students (Karlı, 2008), limits the generalization of the results of the few studies conducted in the Turkish society. For instance, in Duvarcı and Varan's (2001) adaptation study of SOGS, only 59 and 73 participants were reported as sample sizes of the two studies. In addition, only seven women reported for one of the two studies is another limitation with respect to the research of different samples and generalization of findings.

Lack of interest in research related to gambling among Turkish researchers may be both the cause and/or consequence of lack of reliable and valid measurement instruments developed or adapted culturally and scientifically relevant to Turkish gamblers. In fact, the acquaintanceship of Turkish citizens with gambling is not very recent. For instance, officially betting on the scores of football matches is as old as 1960's (Retrieved January, 21, 2012, from http://www.sportoto.gov.tr/turkiyede-spor-toto.aspx) or officially betting on the horse races goes back to 1950's (Retrieved January 21, 2012, from http://www.tjk.org/Content/Tarihce_tr.aspx) according to the records of the official governmental foundations which are responsible for betting on sports and horse-races in Turkey. On the other hand, the history of casinos in Turkey had a short but at the same time disputatious adventure between the years 1985-1998 detailed in the records of the Turkish newspapers (Retrieved January 21, 2012, from http://hurarsiv.hurriyet.com.tr/goster/ShowNew.aspx?id=-6129). The social pressure

about the negative consequences of the gambling both for gambling individuals and the families of those gambling individuals was the source of those disputations.

Taking into consideration the prevalence estimates all over the world concerning pathological and problem gambling and the negative consequences; there seems to be no reason for the Turkish society not to have similar problems. For instance the estimate of 67% who reported that they had gambled last year in Turkey (GIB, 2009) is compatible with estimate of 73% in Britain (Wardle et al., 2011) and more than estimate of 58% in California (Voldberg et al., 2006), Thus, studies to investigate the prevalence estimates, mechanisms of addiction process, consequences, treatment options for pathological and problem gambling is a kind of social responsibility for researchers who at least have an interest in the field and / or have a relevant experience and education to design and conduct related studies that will obviously help in designing the prevention programs for risky groups and in the treatment programs for problem gamblers. This research may aid to put more attention about gambling on the agendas of schools, parents, media, and general health service workers. Additionally, expected original contribution of this research is testing gambling severity within several comprehensive models of personality, cognitive, motivational, and affective factors for a subgroup of gamblers namely sports and horse-race bettors. The results may aid on the efficiency of prevention and therapy designing programs especially within the frame of cognitive therapy.

Concerns mentioned above necessitate the conduction of gambling related research with different variables and different samples using standardized

psychological measures to better understand the situation in the Turkish cultural context at one hand. On the other hand, the results of this research will obviously contribute to the gambling literature which is a universal problem with adverse psychological, social, and financial consequences for gamblers and their families. Within this frame, adapting reliable and valid instruments to assess Turkish gamblers in some psychological dimensions is the first purpose of the study. For this purpose, the psychometric properties of Five-Factor Gambling Motives Scale (GMS; Lee, Chae, Lee, & Kim, 2007) and Gambling Related Cognitions Scale (GRCS; Raylu & Oei, 2004b) will be investigated for Turkish gamblers. Both motives and cognitive distortions seem to play crucial roles in the initiation and maintenance of problem gambling behavior. Established relationships between these variables will obviously also develop the understanding of the factors related to the etiology of the gambling behavior and provide guidelines for psychotherapeutic interventions within the frame of cognitive therapy. It is hypothesized that both GMS and GRCS will discriminate problem and probable pathological gamblers from non-problem gamblers in the Turkish gambling sample as assessed by SOGS.

In the main study, after the adaptation of the above listed scales, model testing will be implemented. The proposed model to be tested in the current study will be a mediational model of the relationships between emotional vulnerability, gambling motives, and severity of gambling in a Turkish sample of horse-race and sports betting gamblers using Structural Equation Modeling (SEM). In their article Cheetman, Allen, Yücel, and Lubman (2010) reviewed the relevant literature to examine the associations of substance use disorders (SUDs) with Negative Affect

(NA), positive affect and effortful control. Although the authors point out that the causality issues between NA and SUDs are complex, resulting evidence of reviewing literature supports a role for NA in the development and maintenance of SUDs. Specification of the role of NA in SUDs will be important within the scope of this research due to the previously mentioned comorbidity and similarities of gambling and SUDs. The proposed path analysis, as shown in Figure 3, suggests that negative affect and neuroticism will predict gambling motives, and in turn gambling motives will predict gambling severity. It is assumed that neuroticism will be associated with avoidance motive to gamble whereas negative affect will be associated with both avoidance and monetary motives to gamble. The path analysis will be tested by LISREL. Analyzing affect (negative affect) and personality (neuroticism) dimensions together with gambling motives of avoidance and monetary to predict gambling severity is not reported in the literature. This suggested model of the present study will be especially important to understand affective, motivational, and personality features of emotionally vulnerable individuals who gamble to cope with their problems with respect to their gambling severity.

Following research questions will be investigated according to the major aims of the study:

1. a.) Is the Turkish version of GMS psychometrically reliable and valid instrument for Turkish horse race and sports betting individuals?

   b.) Is the Turkish version of GRCS psychometrically reliable and valid instrument for Turkish horse race and sports betting individuals?
2. a.) Is the Turkish version of GMS associated with i.) gambling severity? ii.)

gambling harm?

b.) Is the Turkish version of GRCS associated with i.) gambling severity? ii.) gambling harm?

3. a.) Is lower education level associated with higher i.) gambling severity? ii.) gambling participation?

   b.) Is single marital status level associated with higher i.) gambling severity? ii.) gambling participation?

   c.) Is younger age associated with higher i.) gambling severity? ii.) gambling participation?

4. a.) Is devoted time to gambling associated with higher i.) gambling severity? ii.) gambling-related harm? iii.) gambling-related cognitions? iv.) gambling-related motives?

   b.) Is gambling frequency associated with higher i.) gambling severity? ii.) gambling-related harm? iii.) gambling-related cognitions? iv.) gambling-related motives?

   c.) Is wagered money in gambling associated with higher i.) gambling severity? ii.) gambling-related harm? iii.) gambling-related cognitions? iv.) gambling-related motives?

5. a.) Is gambling severity associated with i.) alcohol drinking? ii.) cigarette smoking? iii.) substance misuse?

   b.) Is gambling participation associated with i.) alcohol drinking? ii.) cigarette smoking? iii.) substance misuse?

6. Are stages of change associated with gambling a.) severity? b.) participation?

7. a.) Is higher neuroticism associated with higher i.) gambling severity ii.) gambling-related harm? iii.) avoidance motive

   b.) Is higher negative affect associated with higher i.) gambling severity ii.) gambling-related harm? iii.) avoidance motive iv.) monetary motive
8. Is higher avoidance motive to gamble more associated with a.) gambling severity b.) harm; as compared to excitement, amusement, socialization, and monetary motives to gamble?
9. Is risky gambling associated with a.) gambling motives b.)gambling-related cognitions c.) negative affect d.)neuroticism
10. Does gambling involvement mediate the relationship between a.) gambling motives and gambling severity? b.) gambling cognitions and gambling severity
11. Do gambling motives mediate the relationship between emotional vulnerability and gambling severity (proposed model)?

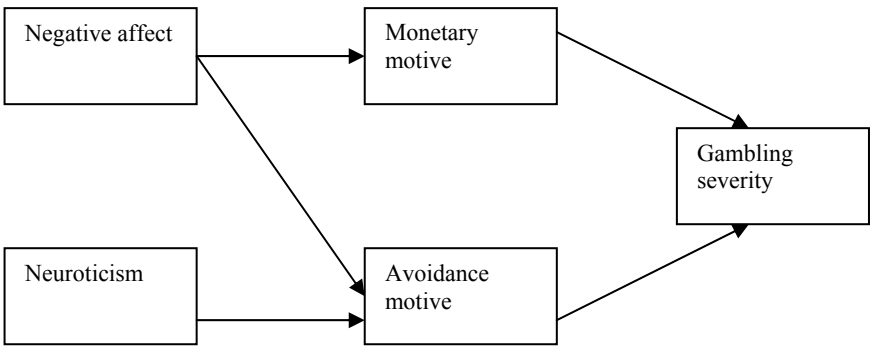


Figure 3. *Proposed model for the role of gambling motives between gambling severity and negative affect and neuroticism*

# CHAPTER 2

# METHOD

## 2.1 Overview

In this section; sample characteristics, descriptions and psychometric properties of both original and adapted versions of the current instruments, procedure of the study, and statistical analyses are presented. The part composed of summarizing details of the demographic characteristics and gambling participation features of the participants are followed by introduction of the instruments used in the present study. Adaptation processes of Gambling Related Cognitions Scale and Gambling Motives Scale together with data collection process are outlined in the procedure section. Statistical analyses conducted in line with the research questions of this study are presented in the next and final part of this section.

## 2.2 Sample

The sample of the present study was composed of horse-race and sports betting gamblers selected through convenience sampling in betting terminals on the basis of voluntary participation in Istanbul, Turkey. The selection of betting terminals as data collection places was to include large numbers of potential problem

and pathological gamblers in the study. The individuals who were under age 18 and who were females were excluded from the study.

The demographic characteristics of the participants of the present study are shown in Table 1. The mean age of the participants was 35.77 (13.51 *Sd* – range: 18-73). 210 (59.3%) participants reported that they were single as compared to 143 (40.4%) participants who reported that they were married. Approximately 80% of the participants were graduated from high school or university. Most of the married participants (40.7%) reported that they were living with their wives and children (the ones who had). Almost three quarters of the sample reported that they were earning less than 2.000 lira. On the other hand, reported household income was more than 4.000 lira for only 20% of the participants. Tobacco smoking (66.4%) and alcohol drinking (57.6%) were also common among the participants of the sample.

Gambling involvement was rather common within the sample of the study. Forty four percent of the sample reported horse-race betting as the gamble they played for a longer time while 47% of the sample reported sports-betting as the gamble they played for the longest time. The range of the duration of past gambling behavior was between 2 to 480 months with a mean month of 108.53 (111.57 *Sd*). Forty three percent and fifty one percent of the sample also reported horse-race and sports betting as their most frequent gambling activity with a mean day of 4.73 (2.24 *Sd* – range = 1-7) per week. The mean of the participants' reports with respect to the amount of the average money they wagered in gambling in a week was 121.70 Lira (212.91 *Sd* – range = 2-2100). The mean of the participants' reports with respect to the average time they devoted to gambling in a week was 9.91 hours (13.16 *Sd* –

range = 0.20-64). The details of the data with respect to participants' gambling involvement are also shown in Table 2.

Table 1. *Demographic characteristics of the participants*

| | Total responses | n | % | *M* | *Sd* | Range |
|---|---|---|---|---|---|---|
| Age | 354 | | | 35.77 | 13.51 | 18-73 |
| Marital status | 353 | | | | | |
| Single | | 210 | 59.3 | | | |
| Married | | 143 | 40.4 | | | |
| Education | 354 | | | | | |
| Literate | | 1 | 0.3 | | | |
| Elementary school | | 35 | 9.9 | | | |
| Secondary school | | 42 | 11.9 | | | |
| High school | | 137 | 38.7 | | | |
| University student | | 61 | 17.2 | | | |
| University | | 78 | 22.0 | | | |
| Live with | 354 | | | | | |
| Wife | | 144 | 40.7 | | | |
| Parents | | 138 | 39.0 | | | |
| Alone | | 30 | 8.5 | | | |
| Friends | | 24 | 6.8 | | | |
| Other | | 18 | 5.0 | | | |
| Personal income (Turkish lira) | 354 | | | | | |
| None | | 27 | 7.6 | | | |
| < 1000 | | 97 | 27.4 | | | |
| 1000 – 2000 | | 141 | 39.8 | | | |
| 2000 – 3000 | | 53 | 15.0 | | | |
| 3000 – 4000 | | 16 | 4.5 | | | |
| > 4000 | | 20 | 5.6 | | | |
| Household income (Turkish lira) | 353 | | | | | |
| None | | 4 | 1.1 | | | |
| < 1000 | | 35 | 9.9 | | | |
| 1000 – 2000 | | 96 | 27.1 | | | |
| 2000 – 3000 | | 95 | 26.8 | | | |
| 3000 – 4000 | | 53 | 15.0 | | | |
| > 4000 | | 70 | 19.8 | | | |
| Cigarette smoking | 353 | | | | | |
| Yes | | 235 | 66.4 | | | |
| No | | 118 | 33.3 | | | |
| Alcohol drinking | 354 | | | | | |
| Yes | | 204 | 57.6 | | | |
| No | | 150 | 42.4 | | | |

Table 2. *Gambling involvement of the participants*

| | *M* | *Sd* | Range |
|---|---|---|---|
| Duration of past gambling (months) | 108.53 | 111.57 | 2 - 480 |
| Frequency of gambling (days / week) | 4.73 | 2.24 | 1 - 7 |
| Average money for gambling (lira / week) | 121.70 | 212.91 | 2 - 2100 |
| Time devoted for gambling (hours / week) | 9.91 | 13.16 | 0.20 - 64 |

## 2.3 Instruments

The instrument set of the current study was composed of Demographic Information Form and Gambling Related Information Form of Attitudes, Cognitions and Behaviors which were designed for the current study. Additionally, five self-report instruments namely Eysenck Personality Questionnaire-Revised & Abbreviated, Positive Affect Negative Affect Scale, Gambling Related Cognitions Scale, Gambling Motives Scale, South Oaks Gambling Screen were used.

### 2.3.1 Demographic Information Form (DIF)

DIF, designed for the current research, consisted of questions regarding demographical variables such as age, income, education and marital status of the participants. Moreover participants' tobacco smoking, alcohol drinking, and substance use were also questioned in this form (See Appendix C for the DIF).

### 2.3.2 Gambling Related Information Form on Attitudes, Cognitions, and Behaviors (GRACB)

GRACB, designed for the current research, consisted of questions that aimed to evaluate the participants' views on variables such as gambling quitting intentions and harm of gambling. With respect to questions about the participants' intentions of quitting gambling, the aim was to investigate their views with respect to quitting gambling modeled from stages of change of transtheoretical model (Prochaska & Norcross, 2003). Since the participants were regular gamblers three statements were designed to meet the stages of change: pre-contemplation (*'I don't contemplate to change my gambling behavior within six months'*), contemplation (*'I contemplate about gambling-related problems in my life and plan to quit gambling within six months'*), and preparation (*'I made some arrangements not to gamble and I try not to gamble'*) stages excluding action and maintenance stages. On the other hand, gambling-related harm was evaluated by means of family and friendship relations, job life, economical concerns, and emotional well being. In addition, data with respect to frequency of gambling behavior, average gambling expenditures, average time devoted to gambling-related affairs such as examining the past performance of horses or sports teams were also collected through this form within the frame of gambling involvement (See Appendix D for the GRACB).

### 2.3.3 Eysenck Personality Questionnaire-Revised & Abbreviated (EPQR-A)

EPQR-A (Francis, Brown, Philipchalk, 1992) is an abbreviated version with 24 items of the original Eysenck Personality Questionnaire (Eysenck et al., 1985). The participants are required to choose either 'yes' or 'no' choices for the items. The questionnaire is composed of three personality dimensions and a lie scale with six items for each dimension. The personality dimensions are neuroticism, psychoticism, and extraversion. EPQR-A was adapted into Turkish by Karancı, Dirik, and Yorulmaz (2007). The internal consistency values were found satisfactory for extraversion, neuroticism, and lie dimensions ($\alpha$ = .78, $\alpha$ = .65, $\alpha$ = .64 respectively) as compared to relatively lower reliability for psychoticism dimension ($\alpha$ = .42). Test-retest reliabilities were found to be .84, .82, .69, and .69 for extraversion, neuroticism, psychoticism, and lie dimensions respectively. Items 2, 4, 13, 15, 20, and 23 measure extraversion; items 5, 7, 10, 17, 19, 24 measure lie; items 1, 9, 11, 14, 18, 21 measure neuroticism; items 3, 6, 8, 12, 16, 22 measure psychoticism. Items 3, 5, 7, 10, 15, 16, 17, 19, 20, and 22 are reversed coded. Subscale scores are derived by summing up the relevant items for the current study (See Appendix E for the EPQR-A).

### 2.3.4 Positive Affect Negative Affect Schedule (PANAS)

PANAS was developed by Watson, Clark, and Tellegen (1988) to measure negative affect and positive affect. It is a 20-item self-report scale and items are rated

on a 5 point Likert-scale (1 = very slightly or not at all; 5 = extremely). The Turkish version of PANAS was adapted by Gençöz (2000) revealing internal consistency reliability .83 for positive affect and .86 for negative affect. Ten items measuring positive affect are 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19 whereas ten items measuring negative affect are 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20. Scores for positive affect and negative affect are derived by computing the mean scores of the relevant items in the current study. No composite score is computed for the whole scale (See Appendix F for the PANAS).

### 2.3.5 Gambling Related Cognitions Scale (GRCS)

GRCS was developed by Raylu and Oei (2004b) to assess gambling related cognitions that are important in the initiation and maintenance of problem gambling. The scale has five subscales that measure inability to stop gambling (GRCS-IS), interpretive bias (GRCS-IB), illusion of control (GRCS-IC), gambling expectancies (GRCS-GE), and predictive control (GRCS-PC). Twenty three statements of the scale are evaluated by the participants on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Cronbach alpha analyses revealed moderate to high reliability for the subscales: .89, .91, .87, .87, and .77 for GRCS-IS (e.g. 'It is difficult to stop gambling as I am so out of control'), GRCS-IB (e.g. 'Relating my losses to bad luck and bad circumstances makes me continue gambling'), GRCS-IC (e.g. 'I have specific rituals and behaviors that increase my chances of winning'), GRCS-GE (e.g. 'Having a gamble helps reduce tension and stress'), GRCS-PC (e.g. 'A series of

losses will provide me with a learning experience that will help me win later') respectively (Raylu & Oei, 2004b). GRCS-IS is composed of 5 items (item numbers: 2, 7, 12, 17, 21), GRCS-IB is composed of items 4 items (item numbers: 5, 10, 15, 20), GRCS-IC is composed of 4 items (item numbers: 3, 8, 13, 18), GRCS-GE is composed of 4 items (item numbers: 1, 6, 11, 16), and GRCS-PC is composed of 6 items (item numbers: 4, 9, 14, 19, 22, 23). Additionally Cronbach's alpha was reported as .93 for the overall scale. Expected correlations of the GRCS total and subscales with anxiety, depression, stress, motivations toward gambling, and SOGS score were reported as supporting concurrent validity of the scale and the ability to discriminate between non-problem gamblers and problem gamblers were reported as supporting criterion-related validity of the scale (Raylu & Oei, 2004b). Overall, Raylu and Oei (2004b) concluded that the scale was a useful tool to assess cognitions among nonclinical gamblers having good validity and reliability. According to the results of the adaptation study of GRCS that was carried out in the Chinese culture, it was reported that the Chinese version of the scale was reliable and valid (Oei, Lin, & Raylu, 2007). It was reported that Cronbach's alpha scores for GRCS-IS, GRCS-IB, GRCS-IC, GRCS-GE, GRCS-PC, and for the overall scale were .85, .89, .85, .84, .83, and .95 respectively. In another study by Emond and Marmurek (2010), overall reliability was reported .91 and Cronbach's alpha values for subscales were reported ranging from .72 for GRCS-GE to .84 for GRCS-IS. Total and subscale scores are derived by computing the mean scores of all items for the whole scale or the relevant items for the subscales. GRCS was translated and adapted for the current study and the findings are presented in the results section (See Appendix G for the GRCS).

### 2.3.6 Five-Factor Gambling Motives Scale (GMS)

GMS was developed by Lee, Chae, Lee, and Kim (2007) to explore the underlying psychological motives of pathological gambling. Motives that are namely; socialization, amusement, avoidance, excitement, and monetary were derived from a study on college students and the structure was also confirmed by factor analyses of data obtained from frequent gamblers. Thirty five statements inquiring about gambling reasons of the scale are evaluated by the participants on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Moderate to high reliability was reported for the motives: .89, .87, .90, .83, and .78 for excitement (e.g. 'have fun in risk taking'), monetary (e.g. 'need big money'), avoidance (e.g. 'feel depressed/sad'), socialization (e.g. 'makes it easy to meet new people'), and amusement (e.g. 'energize life') respectively. Excitement motive is composed of 8 items (item numbers: 1, 6, 11, 16, 21, 26, 30, 33), monetary motive is composed of 8 items (item numbers: 2, 7, 12, 17, 22, 27, 31, 34), avoidance motive is composed of 7 items (item numbers: 3, 8, 13, 18, 23, 28, 32), socialization motive is composed of 6 items (item numbers: 4, 9, 14, 19, 24, 29), amusement motive is composed of 6 items (item numbers: 5, 10, 15, 20, 25, 35). Additionally Cronbach's alpha was reported as .92 for the overall scale. Lee et al. (2007) concluded that only the monetary motive exerted significant influence over the severity of gambling. On the other hand, the researchers reported that socialization and amusement motives did not directly influence gambling severity whereas avoidance and excitement motives worked

through the reinforcement of monetary concerns according to their monetary motive mediated model. GMS was translated and adapted for the current study and the findings are presented in the results section (See Appendix H for the GMS).

### 2.3.7 South Oaks Gambling Screen (SOGS)

SOGS (Lesieur & Blume, 1987) is self-report questionnaire that assess lifetime prevalence of gambling together with associated problems. The screen also questions about the frequency of preferred gambling activities. It is composed of 20 items to assess gambling problems and pathological gambling with a range of scores 0 to 20. The first 3 items are excluded from the score of the whole scale. Scores of 5 or greater are used to identify pathological gamblers. The internal consistency of SOGS and test-retest reliability were found .97 and .71 respectively (Lesieur & Blume, 1987). Turkish form of the SOGS (Duvarcı & Varan, 2001) revealed significantly high test-retest reliability and internal consistency reliability reported as .95 and .88 respectively. Three items (*'borrowed money from spouse or partner', 'sold stocks, bonds', 'chequing accounts or passed bad cheques'*) that did not discriminate between pathological and non-pathological gamblers in the Turkish culture were replaced with two culturally relevant items by the researchers (*'borrowed money from friends or known people', 'sold gold or jewelry'*). Duvarcı and Varan (2001) reported that 19-item Turkish form of SOGS was able to discriminate between pathological gamblers and non-pathological gamblers. SOGS total score is obtained simply by summing up the responses to the 19 items of the

Turish version of the scale. Participants who score eight or above are evaluated as probable pathological gamblers according to SOGS in Turkey as suggested by Duvarcı and Varan (2001). It is important to note that, although participants who score five or above are classified as probable pathological gamblers in most of the studies (e.g. Cox et al., 2000; Petry & Mallya, 2004) there are other reports to offer cut score of eight such as the Chinese version of the scale depending upon a recent study (Tang, Wu, Tang, & Yan, 2010). The adaptation study of SOGS was carried out with 59 and 73 Turkish gamblers in two separate studies (Duvarcı & Varan, 2001). There were 7 women in the first study whereas all of the participants were men in the second study. The authors suggested that it would not be convenient to generalize the results of the screen including female gamblers till relevant data with women will be collected (See Appendix I for the SOGS).

### 2.3.8 Internal Consistency of the Instruments Used in the Study

Internal consistency coefficients are computed utilizing the data of the present study for the instruments that are presented in detail above. In Table 3 Cronbach's alpha values and item-total correlations range of the instruments that are used in the present study are shown excluding newly adapted instruments namely; GMS and GRCS. Cronbach's alpha values and item-total correlations range of the Turkish versions of GMS and GRCS are presented in the results chapter. The internal consistency values found for EPQR-A subscales were compatible with the ones found for those subscales in the Turkish adaptation study (Karancı, Dirik, &

Yorulmaz, 2007) of the questionnaire. Cronbach's alpha value for psychoticism scale was rather low as reported in several other studies (e.g., Katz & Francis, 2000, Yorulmaz, 2007). Psychoticism subscale was excluded from further analyses in the present study. On the other hand, although Cronbach's alpha values of positive affect, negative affect and SOGS, were slightly lower than both the original versions' and the Turkish adapted versions' values, they were assessed as satisfactory with respect to their internal consistencies.

Table 3. *Internal consistency coefficients of the instruments used in the present study*

| | Cronbach Alpha (Item Total Correlations Range) |
|---|---|
| Measures | |
| EPQR-A Neuroticism | 0.67 (0.32-0.46) |
| EPQR-A Psychoticism | 0.31 (0.07-0.22) |
| EPQR-A Extraversion | 0.77 (0.41-0.63) |
| EPQR-A Lie | 0.65 (0.20-0.49) |
| PANAS positive affect | 0.81 (0.26-0.63) |
| PANAS negative affect | 0.79 (0.30-0.52) |
| SOGS | 0.78 (0.09-0.52) |

## 2.4. Procedure

Translation and back translation method was carried out during the adaptation of the Turkish versions of the GRCS and GMS. Translation of the original forms into Turkish by the researcher and his advisor was followed by the evaluation of the

translated items through rating each item by two other independent judges in respect to comprehensibility. Before back translation of Turkish items into English by two other independent judges, Turkish forms were also evaluated in respect to grammatical and semantic suitability by a Turkish language teacher. Final versions of the forms were decided by the researcher and his advisor.

The instrument set was composed of DIF, GRACB, EPQA-R, PANAS, GRCS, GMS, and SOGS. The set was administered to participants in Istanbul selected through convenience sampling in horse-race and sports betting terminals on the basis of voluntary participation between May 1 and June 15 in 2011, after getting ethical approval from the ethics committee of Middle East Technical University. Participants signed a written informed consent form including the information that participation was voluntary and withdrawal at any time of the study was possible.

Sixteen, volunteer third year psychology major students studying at Maltepe University in Istanbul who were selected from appropriate applicants conducted data collection. The students were given bonus for Psychopathology course. Potential problems, ethical concerns were discussed in detail within the training period of the students about the construct and content of the test battery. Each of the sixteen students conducted the test battery with three participants as a pilot study. Apart from the students' training, pilot study was also designed to measure the average questionnaire administration time and to test the overall flow of the battery. Throughout the data collection process, weekly supervision meetings were carried out to support the students by the researcher. None of students dropped out working for the study.

## 2.5 Statistical Analysis

Statistical analyses were conducted with Statistical Package of Social Sciences (SPSS) 16 Program and LISREL 8.80 (Student edition). Accuracy of data entry, missing values, univariate and multivariate outliers were examined before the analysis. Two cases with extremely high z scores on negative affect and one case with extremely high z score on gambling severity were found to be univariate outliers. Deletion of those three cases resulted in 354 cases for subsequent analyses. The mean scores for positive and negative affect, gambling motives, gambling-related cognitions, and gambling-related harm questions were utilized in the analyses. Moreover; average duration of past gambling behavior, frequency of gambling, average amount of time devoted to gambling, average amount of money spent for gambling, and amount of money spent for gambling in terms of personal income and household income as reported by the participants were logarithmically transformed to improve pairwise linearity and to reduce extreme skewness and kurtosis for those variables. Logarithmically transformed values for those measures were used throughout the analyses.

Factor analysis was carried out for GRCS and GMS with Principal Component Analysis and Varimax rotation. Internal consistency of the whole scales and subscales were assessed by Cronbach's alpha values. For the criterion validity of GRCS, GMS, and gambling-related harm questions developed by the researcher for the current study, group comparisons were carried out with respect to gambling severity of the participants as measured by SOGS. Low and high gambling severity

groups were formed and they were contrasted in their scores of gambling-related cognitions, gambling motives, and gambling-related harm questions. In addition, Pearson Product correlations were analyzed for the concurrent validity of the same measures. The selected variables to examine the correlations with GRCS, GMS, and gambling-related harm questions were determined due to established and expected associations reported in the literature.

Correlational analyses were conducted for all variables of the study to examine the associations among them. One-way ANOVA's, ANCOVA's, MANOVA's, and independent t-tests were performed to compare the groups of participants with respect to their features such as gambling severity, demographic characteristics, stages of change on their scores of different measures such as personality dimensions, affect, gambling motives, gambling-related cognitions. Chi square analyses were conducted to examine the responses of the participants on SOGS items with respect to their total gambling severity scores. Moreover separate hierarchical multiple regression analyses and logistic regression analysis were performed to determine the predictors of gambling severity and gambling-related harm. Finally, path analysis was conducted by LISREL to test the comprehensive model suggested by the present study.

# CHAPTER 3

# RESULTS

## 3.1 Overview

In this section, psychometric properties of the adapted instruments, namely GRCS and GMS together with developed gambling-related harm questions for the current study are presented first. Secondly, the correlation coefficient values are outlined among the used measures of the present study. In addition, the gambling severity scores of the participants are presented specifying their responses on individual SOGS items. Group comparisons results with respect to participants' responses or scores on several measures such as demographics, stages of change, gambling severity are presented next. In the following parts, results of regression analyses performed to determine the predictors of gambling severity and gambling-related harm are presented. Finally, the path analysis to test negative affect regulation of the participants is presented in the last part of this section.

## 3.2 Psychometric Properties of the Gambling Related Cognitions Scale (GRCS)

A Principal Components Factor Analysis with Varimax rotation was carried out on the 23 items of the GRCS in the first step of exploring the psychometric

properties of the Turkish version of the GRCS. The items of the scale loaded on factors in a quite different fashion as compared to the original scale. Moreover internal reliability scores of the subscales of GRCS were low. The results of the factor analysis are shown in Appendix A. In the next step, alpha coefficients for factors of the Turkish version of the scale were tested according to the original factor structure of GRCS. Reliability coefficients found for factors are shown in Table 4.

Table 4. *Internal consistency and item total range of GRCS (original)*

| | GRCS | | | | | |
|---|---|---|---|---|---|---|
| | GRCS-IS | GRCS-IB | GRCS-IC | GRCS-EXP | GRCS-PC | Total |
| Cronbach's alpha | .78 | .61 | .50 | .57 | .57 | .83 |
| Item-Total Correlation Range | .49-.59 | .36-.42 | .18-.37 | .32-.36 | .09-.43 | .09-.60 |

*Note:* GRCS: Gambling Related Cognitions Scale, GRCS-IS: Gambling Related Cognitions Scale – Inability to Stop, GRCS-IB: Gambling Related Cognitions Scale – Interpretive Bias, GRCS-IC: Gambling Related Cognitions Scale – Illusion of Control, GRCS-GE: Gambling Related Cognitions Scale – Gambling Expectancies, GRCS-PC: Gambling Related Cognitions Scale – Predictive Control.

As a result of these analyses, carrying out the rest of the study according to the whole score of the GRCS rather than subscale scores was decided for several reasons. First of all, the participants of the present study were a rather homogenous group with respect to gambling types composed of individuals who bet on sports and horse-races as compared to more heterogeneous participants with respect to various gambling types of the original scale. The proposal of a different factor structure of the scale may be a premature inference because of the mentioned sample make-up. In relation, as far as it is known, this is the second attempt to adapt GRCS in a different culture following the Chinese version of the GRCS (Oei, Lin, & Raylu, 2007). Thus, empirical support for a different factor structure of GRCS even if it exists is not

available yet. Thirdly, consideration of cross-cultural contribution in the literature necessitates utilization of analogous measurement tools for communication purposes. Fourthly, Cronbach's alpha (.83) value found for the whole scale in the current study was quite compatible with the Cronbach's alpha (.93) value found for the whole scale of the original scale although the Cronbach's alpha scores for the subscales in the current study were low. Only the items 3 (.19) and 19 (.09) had relatively lower item-total correlation values. They were not deleted due to the above reasons. Fifthly, Raylu and Oei (2004b) as the developers of the original scale stated that it could be more appropriate to use total GRCS scores rather than the subscale scores in prediction of gambling severity due to subscale GRCS-IC masking subscale GRCS-PC and high level of internal consistency for the entire scale. They added that GRCS provided the first step in the process of developing more specialized instruments to assess different cognitions domains with respect to gambling. Finally and maybe most importantly, this study aims to adapt and examine initial psychometric properties of GRCS in Turkish culture in order to evaluate its interrelationships with related variables. Thus this study is not purely psychometric. However, research both in Turkey with different type of gamblers and in different cultures with GRCS will obviously also improve the implications of the factorial analysis of the present study.

### 3.2.1 Concurrent Validity of the GRCS

At the time of this study, there were not similar instruments with respect to gambling related cognitions developed or adapted for Turkish language to compare

concurrent validity of the GRCS. That is why a correlational analysis of the GRCS with negative affect, neuroticism and gambling severity as measured by SOGS was carried out for empirical support of concurrent validity of the scale due to established relationships in the literature. In fact this is exactly what Raylu and Oei (2004b) had done to test the concurrent validity of the original scale. They reported significant positive low correlations of total GRCS score with anxiety (.20), depression (.15), and stress (.12); and positive to moderate correlations with motivation towards gambling subscales (range = .12 – .50) and SOGS (.43) score.

GRCS mean scores correlated significantly and positively with related variables at .01 level as shown in Table 5. The correlation coefficients of total GRCS mean score with negative affect (.14) and SOGS (.36) score was compatible with findings of Raylu and Oei's (2004b) research supporting evidence of concurrent validity of GRCS. Moreover, Turkish version of GRCS was found to be correlated significantly and positively with neuroticism (.16) in addition to the negative affect and with devoted time to gambling-related affairs (.31) in addition to the gambling severity scores supporting the evidence for concurrent validity of the scale.

Table 5. *Concurrent validity of GRCS*

| Measures | Correlations GRCS score |
|---|---|
| Neuroticism | .16** |
| Negative affect | .14** |
| SOGS | .36** |
| Devoted time to gambling | .31** |

** $p < .01$; n = 354

### 3.2.2 Criterion Validity of the GRCS

Raylu and Oei (2004b) compared two groups based on their SOGS scores in terms of GRCS scores as part of the examination of the criterion-related validity of GRCS. One of the groups had SOGS scores of 0 and the other group had SOGS scores of 4 or higher in their comparison. Raylu and Oei (2004b) reported that the groups differed significantly with respect to GRCS subscale and total scores according to results of the ANOVA analysis. Gambling related cognitions of the group with SOGS scores of 4 or higher were found to be significantly more than the group with SOGS scores of 0 at .001 level.

In line with Raylu and Oei (2004b), to evaluate the criterion-related validity of the Turkish version of GRCS, participants of the present study were divided into two groups: SOGS group 1 with SOGS scores = 0 and SOGS group 2 with SOGS scores = 4 or higher. Results revealed similar results with the original study of GRCS (Raylu & Oei, 2004b) with respect to criterion-related validity. The groups differed significantly with respect to their GRCS mean scores ($t$ (200) = -7.71, $p < 0.001$). Means and standard deviations of GRCS score for each group are shown in Table 6.

Table 6. *Means and (standard deviations) of GRCS scores for the SOGS groups*

| | SOGS group 1<br>SOGS = 0<br>($n$ = 54) | SOGS group 2<br>SOGS ≥ 4<br>($n$ = 148) | $t$ |
|---|---|---|---|
| GRCS score | 2.11 (0.83) | 3.24 (0.96) | (200) = -7.71* |

* $p < .001$

Moreover, extreme groups on higher and lower SOGS scores were formed and group comparisons between high and low gambling scores were contrasted for GRCS scores for the criterion validity based on half standard deviation (1.49) above and below the mean score (3.50) of SOGS. Accordingly, two extreme groups on SOGS scores (within highest [over 4; N = 116] and lowest [below 3; N = 160]) were contrasted on GRCS. Two groups differed significantly with respect to their GRCS mean scores ($t$ (274) = -6.62, $p < .001$). Means and standard deviations of low and high gambling severity groups with respect to their GRCS mean scores are shown in Table 7.

Table 7. *Means and (standard deviations) of GRCS scores for the low and high gambling severity groups*

| Group | SOGS ≤ 2 ($n$ = 160) $M$ ($Sd$) | SOGS ≥ 5 ($n$ = 116) $M$ ($Sd$) | $t$ |
|---|---|---|---|
| GRCS score | 2.51 (0.91) | 3.27 (0.97) | (274) = -6.62* |

* $p < .001$

Overall, findings about internal consistency of the whole scale, group comparison based on gambling severity scores, and corrrelational analysis with related variables demonstrated that the Turkish version of the GRCS was psychometrically reliable and valid. As noted earlier, since the present study is not purely psychometric and the aim is to adapt and examine initial psychometric properties of GRCS and evaluate its interrelationships with related variables, GRCS seemed to show promising results with respect to its total score.

### 3.3 Psychometric Properties of the Gambling Motives Scale (GMS)

A Principal Components Factor Analysis with Varimax rotation was carried out on 35 items of the GMS in the first step of exploring the psychometric properties of the Turkish version of GMS. Loadings of variables on the factors, percent of variance, eigenvalues, and internal consistency values of the factors are presented in Appendix B. The items of the scale loaded on factors in a slightly different fashion as compared to the original version of the scale. In the next step, alpha coefficients for factors were tested according to the original factor structure of GMS (Lee et al., 2007). Reliability coefficients found for coping, amusement, monetary, socialization, and excitement factors were .81, .73, .81, .80, and .79 respectively as shown in Table 8. The reliability coefficient for the whole scale was .89. All of the factors were positively and significantly correlated with each other (range = 0.14 - 0.72) as shown in Table 9.

Table 8. *Item total range of GMS with five factors (original)*

| | GMS | | | | | |
|---|---|---|---|---|---|---|
| | Avoidance | Amusement | Monetary | Socialization | Excitement | Total |
| Cronbach's alpha | .81 | .73 | .81 | .80 | .79 | .89 |
| Item-Total Correlation Range | .28-.67 | .36-.51 | .25-.71 | .50-.66 | .41-.63 | .30-.54 |

Table 9. *Factor intercorrelations between factors of GMS*

| Factor | avoidance | amusement | monetary | socialization | excitement |
|---|---|---|---|---|---|
| avoidance | 1.00 | | | | |
| amusement | .33** | 1.00 | | | |
| monetary | .38** | .32** | 1.00 | | |
| socialization | .26** | .57** | .16* | 1.00 | |
| excitement | .14* | .72** | .34** | .41** | 1.00 |

* $p < 0.05$, ** $p < 0.001$; n = 354

As a result of these analyses, carrying out the rest of the study according to the original factor structure of GMS was decided for several reasons. First of all, the participants of the present study were a rather homogenous group with respect to gambling types composed of individuals who bet on sports and horse-races as compared to the sample of the original scale composed of more heterogeneous participants with respect to various gambling types. The proposal of a different factor structure of the scale may be a premature inference because of the mentioned sample make-up. In relation, as far as it is known, this is the first attempt to adapt GMS in a different culture. Thus, empirical support for a different factor structure of GMS is not available yet. Thirdly, consideration of cross-cultural contribution in the literature necessitates utilization of analogous measurement tools for communication purposes. Fourthly, in spite of the items' diffusion across factors of the scale in the current study in a slightly different fashion as compared to the original scale, internal reliability coefficients of both the subscales and the whole scale yielded compatible results when compared to the original scale. Finally and maybe most importantly, this study aims to adapt and examine initial psychometric properties of GMS in

Turkish culture in order to evaluate its interrelationships with related variables. Thus this study is not purely psychometric. Because of the above reasons, original factor structure of the scale was not modified for the rest of the present study. However, research both in Turkey with different type of gamblers and in different cultures with GMS will obviously improve the implications of the present study's findings with respect to factor structure of GMS.

### 3.3.1 Concurrent Validity of the GMS

Correlational analysis of GMS factors with neuroticism, negative affect, positive affect, gambling severity measured by SOGS, time devoted to gambling-related affairs, and gambling intensity (percentage of household income / average monthly gambling expenditure) was carried out for empirical support of concurrent validity of the scale. The results are shown in Table 10. According to the results of the analyses avoidance motive was positively and significantly correlated with neuroticism (.45), negative affect (.46), gambling severity (.39), devoted time to gambling (.15), and percent of wagered money in gambling with respect to household income (.21). It was also negatively correlated with extraverion (.-17) and positive affect (-.16). Amusement motive was positively and significantly correlated with positive affect (.17), gambling severity (.21), devoted time to gambling (.34), gambling intensity (.18), and it was negatively and significantly correlated with extraversion (-.11). Monetary motive was positively and significantly correlated with neuroticism (.20), negative affect (.22), gambling severity (.34), and devoted time to

gambling (.19). Socialization motive was only correlated with positive affect (.12) and devoted time to gambling (20). Finally, excitement motive was correlated with positively and significantly with positive affect (.28), gambling severity (.23), and devoted time to gambling (.33).

Table 10. *Concurrent validity of GMS*

| Measures | avoidance | amusement | monetary | socialization | excitement |
|---|---|---|---|---|---|
| Neuroticism | .45** | .07 | .20** | .07 | .05 |
| Extraversion | -.17* | -.11* | -.08 | -.07 | -.06 |
| Negative affect | .46** | .04 | .22** | -.01 | .07 |
| Positive affect | -.16* | .17* | -.04 | .12* | .28** |
| SOGS | .39** | .21** | .34** | .09 | .23** |
| Devoted time to gambling | .15* | .34** | .19** | .20** | .33** |
| Gambling intensity | .21** | .18* | .07 | .06 | .09 |

* $p < .05$, ** $p < .01$; n = 354

### 3.3.2 Criterion Validity of the GMS

One-way MANOVA was conducted to explore the gambling motives differences in gambling severity scores of the participants for the criterion validity of the GMS. Extreme groups on higher and lower gambling severity scores measured by SOGS were formed and group comparisons between high and low gambling severity scores were contrasted for GMS factor scores based on half standard deviation (1.49) above and below the mean score (3.50) of SOGS. Accordingly, two extreme groups on SOGS scores (within highest [over 4; N = 116] and lowest [below 3; N = 160]) were contrasted on GMS factors. There was statistically significant

difference between the gambling motive scores of the groups of individuals who had low and high scores on SOGS ($F(5, 270) = 12.73$, $p < .001$, Wilks' $\lambda = .81$, partial $\eta^2 = .19$). Bonferroni adjusted alpha level of .01 was used for statistical significance, when the results of the dependent variables were considered separately. Results showed that there were significant differences between two groups in relation to all GMS factor scores except the GMS-socialization factor. The participants who were in high gambling severity group had significantly higher gambling motives scores as compared to the participants who were in the low gambling severity group except socialization motive. The mean and standard deviation scores of the gambling motives for the low and high gambling severity groups are shown in Table 11 together with the univariate *F* scores.

Table11. *Means and (standard deviations) of GMS scores for the low and high gambling severity groups*

| | **Gambling motives** | | | | |
|---|---|---|---|---|---|
| | Avoidance *M* (*Sd*) | Amusement *M* (*Sd*) | Monetary *M* (*Sd*) | Socialization *M* (*Sd*) | Excitement *M* (*Sd*) |
| Low gambling severity group | 1.53 (0.66) | 2.67 (1.04) | 2.45 (0.96) | 2.28 (1.17) | 3.22 (0.97) |
| High gambling severity group | 2.12 (0.97) | 3.11 (0.99) | 3.17 (1.01) | 2.41 (1.04) | 3.66 (0.91) |
| *F* (1, 274) | 36.23* | 12.72* | 36.08* | 0.95 | 15.09* |
| partial $\eta^2$ | .12 | .04 | .12 | .00 | .05 |

* $p < .001$

Overall, findings about internal consistency of both the whole and the factors of the scale, group comparison based on gambling severity scores, and corrrelational analysis with related variables of GMS demonstrated that the Turkish version of the

scale was psychometrically reliable and valid. As noted earlier, since the present study is not purely psychometric and the aim is to adapt and examine initial psychometric properties of GMS and evaluate its interrelationships with related variables, GMS seemed to show promising results.

### 3.4 Psychometric Properties of the Gambling-Related Harm Questions

The data with respect to gambling-related harm reports of the participants were collected through five questions in the present study. The questions were rated on a 4 point Likert-scale (1 = no harm; 4 = very much harm). The possible lowest and highest scores were 5 and 20 respectively. Cronbach's alpha value for the scale was found to be .86.

#### 3.4.1 Concurrent Validity of the Gambling-Related Harm Questions

Correlational analysis of mean gambling-related harm scores with neuroticism, negative affect, positive affect, SOGS, time devoted to gambling-related affairs, and gambling intensity (percentage of household income / average monthly gambling expenditure) was carried out for empirical support of the concurrent validity of the gambling-related harm questions developed for the current study. As shown in Table 12 positive and significant correlations with neuroticism (.31), negative affect (.30), gambling severity measured by SOGS (.53), time devoted to gambling-related affairs (.23), and gambling intensity (.38) were found according to

the correlational analysis. Gambling-related harm mean scores also correlated negatively and significantly with positive affect (-.14).

Table 12. *Concurrent validity of gambling-related harm*

| Measures | Correlation score with gambling-related harm |
|---|---|
| Neuroticism | .31** |
| Negative affect | .30** |
| Positive affect | -.14* |
| SOGS | .53** |
| Devoted time to gambling | .23** |
| Gambling intensity | .38** |

** $p < .001$, * $p < .05$; n = 354

### 3.4.2 Criterion Validity of the Gambling-Related Harm Questions

Extreme groups on higher and lower gambling severity measured by SOGS scores were formed and group comparisons between high and low gambling scores were contrasted for gambling-related harm mean scores for the criterion validity based on half standard deviation (1.49) above and below the mean score (3.50) of SOGS. Accordingly, two extreme groups on SOGS scores (within highest [over 4; N = 116] and lowest [below 3; N = 160]) were contrasted on harm scores. Two groups differed significantly with respect to their harm mean scores ($t(274) = -9.79$, $p<0.001$). Means and standard deviations of low and high gambling severity groups with respect to their gambling-related harm scores are shown in Table 13.

Table 13. *Means and (standard deviations) of gambling-related harm scores for the low and high gambling severity groups groups*

| Group | SOGS ≤ 2 ($n$ = 160) $M$ ($Sd$) | SOGS ≥ 5 ($n$ = 116) $M$ ($Sd$) | $t$ |
|---|---|---|---|
| Gambling-related harm score | 1.28 (0.47) | 2.02 (0.79) | (274) = -9.79* |

* $p < .001$

Based on the above analyses, gambling related harm mean scores were used in the present study to investigate harm's interrelationships with relevant variables.

### 3.5 Correlational Analysis among Measures

Correlational analyses were carried out for the examination of the relationships among measures of the present study. Generally speaking, gambling severity as measured by SOGS was significantly correlated with most of the measures of the present study as expected. As can be seen in Table 14, gambling severity was positively and significantly correlated with all measures of gambling involvement; namely average amount of money wagered in gambling ($r$ = .43, $p$ < .001), percent of that wagered money in proportion to personal income ($r$ = .45, $p$ < .001), percent of that wagered money in proportion to household income ($r$ = .44, $p$ < .001), average time devoted to gambling ($r$ = .41, $p$ < .001), duration of past gambling history ($r$ = .15, $p$ < .05), frequency of gambling ($r$ = .26, $p$ < .001), and total number of gambling types preferred ($r$ = .19, $p$ < .001). With respect to the individual differences and affect, gambling severity was positively correlated with neuroticism ($r$ = .28, $p$ < .001), whereas it was positively correlated with negative

affect ($r$ = .26, $p$ < .001) and negatively correlated with positive affect ($r$ = -.11, $p$ < .05). Gambling severity was also found to be positively and significantly correlated with gambling motives except socialization motive to gamble. In other words it was positively and significantly correlated with avoidance ($r$ = .39, $p$ < .001), amusement ($r$ = .21, $p$ < .001), monetary ($r$ = .34, $p$ < .001), and excitement motives ($r$ = .23, $p$ < .001). In addition, gambling severity was positively and significantly correlated with gambling-related cognitions ($r$ = .36, $p$ < .001) and reported gambling-related harm questions ($r$ = .53, $p$ < .001).

Gambling-related harm, as another essential variable of the present study, was positively and significantly correlated with some measures of gambling involvement; namely average amount of money wagered in gambling ($r$ = .32, $p$ < .001), percent of that wagered money in proportion to personal income ($r$ = .39, $p$ < .001), percent of that wagered money in proportion to household income ($r$ = .40, $p$ < .001), average time devoted to gambling ($r$ = .23, $p$ < .001), and frequency of gambling ($r$ = .25, $p$ < .001). With respect to individual differences and affect, gambling-related harm was positively correlated with neuroticism ($r$ = .31, $p$ < .001) and negative affect ($r$ = .30, $p$ < .001), whereas it was negatively correlated with extraversion ($r$ = -.13, $p$ < .05) and positive affect ($r$ = -.14, $p$ < .05). Gambling-related harm was only found positively and significantly correlated with avoidance ($r$ = .39, $p$ < .001) and monetary ($r$ = .20, $p$ < .001) motives among five gambling related motives. The correlation between harm and gambling-related cognitions was also significant and positive ($r$ = .16, $p$ < .05).

With respect to the association between personality variable and gambling motives and cognitions; extraversion was negatively and significantly associated with avoidance ($r$ = -.17, $p$ < .05) and amusement ($r$ = -.11, $p$ < .05) motives whereas neuroticism was positively and significantly correlated with avoidance ($r$ = .45, $p$ < .001), monetary ($r$ = .20, $p$ < .001) motives and gambling-related cognitions ($r$ = .16, $p$ < .05). On the other hand, with respect to the association between affect variable and gambling motives and cognitions; positive affect was significantly and positively correlated with amusement ($r$ = .17, $p$ < .05), excitement ($r$ = .28, $p$ < .001), socialization ($r$ = .12, $p$ < .05), motives and gambling related cognitions ($r$ = .13, $p$ < .05) and negatively with avoidance motive ($r$ = -.16, $p$ < .05) whereas negative affect was significantly and positively correlated with avoidance ($r$ = .46, $p$ < .001), monetary ($r$ = .22, $p$ < .001) motives and gambling-related cognitions ($r$ = .14, $p$ < .05). Finally all of the gambling motives were found to be positively and significantly correlated with gambling related cognitions, namely; avoidance ($r$ = .28, $p$ < .001), amusement ($r$ = .51, $p$ < .001), monetary ($r$ = .48, $p$ < .001), socialization ($r$ = .33, $p$ < .001) and excitement ($r$ = .52, $p$ < .001).

Table 14. *Correlation coefficients among variables*

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. SOGS | | | | | | | | | | | | | | |
| 2. age | .01 | | | | | | | | | | | | | |
| 3. personal income | .02 | .27** | | | | | | | | | | | | |
| 4. household income | -.02 | .02 | .50** | | | | | | | | | | | |
| 5. gamb. investment | .43** | .17* | .44** | .28** | | | | | | | | | | |
| 6. % of personal inc. / gamb. invest. | .45** | .05 | -.09 | -.01 | .83** | | | | | | | | | |
| 7. % of house inc. / gamb. invest. | .44** | .17* | .20** | -.21** | .87** | .85** | | | | | | | | |
| 8. devoted time to gamb. | .41** | .23** | .10 | .06 | .57** | .57** | .55** | | | | | | | |
| 9. duration of gamb. | .15* | .49** | .19** | .08 | .35** | .27** | .31** | .38** | | | | | | |
| 10. frequency of gamb. | .26** | .11* | -.01 | .04 | .50** | .55** | .48** | .55** | .26** | | | | | |
| 11. number of gamb. types | .19** | -.12* | .08 | .11* | .15* | .13* | .11* | .14* | .04 | .06 | | | | |
| 12. EPQ-lie | -.17* | .36** | .10 | -.01 | .09 | .05 | .10 | .06 | .21** | .08 | -.14* | | | |
| 13. EPQ-extraversion | -.10 | -.15* | -.02 | .10 | -.10 | -.11* | -.14* | -.13* | -.08 | -.03 | .03 | -.04 | | |
| 14. EPQ-neuroticism | .28** | -.06 | -.09 | -.08 | .04 | .09 | .08 | .05 | -.02 | .07 | .02 | -.18** | -.19** | |
| 15. negative affect | .26** | -.16* | -.15* | -.09 | .01 | .09 | .05 | -.04 | -.10 | -.02 | .12* | -.16** | -.10 | .54** |
| 16. positive affect | -.11* | -.06 | .05 | .06 | .01 | -.01 | -.01 | .07 | .05 | .02 | .13* | .01 | .27** | -.17* |
| 17. GMS-avoidance | .39** | .09 | -.19** | -.17* | .08 | .19** | .17* | .15* | .05 | .08 | .07 | -.06 | -.17* | .45* |
| 18. GMS-amusement | .21** | .16* | -.02 | .06 | .22** | .28** | .21** | .34** | .24** | .23** | .21** | -.03 | -.11* | .07 |
| 19. GMS-monetary | .34** | -.09 | -.18** | -.09 | .09 | .22** | .13* | .19** | .09 | .16* | .17* | -.22** | -.08 | .20** |
| 20. GMS-socialization | .09 | .27** | -.11* | -.09 | .04 | .12* | .09 | .20** | .16* | .15* | .01 | .05 | -.07 | .07 |
| 21. GMS-excitement | .23** | .06 | .01 | .15* | .23** | .27** | .16* | .33** | .15* | .24** | .25** | -.10 | -.06 | .05 |
| 22. GRCS | .36** | -.02 | -.07 | .02 | .22** | .30** | .22** | .31** | .07 | .24** | .27** | -.18* | -.07 | .16* |
| 23. Gambling-related harm | .53** | .04 | -.08 | -.15* | .32** | .39** | .40** | .23** | .05 | .25** | .00 | -.05 | -.13* | .31** |

Table 14. *Continued*

| | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|
| 16. positive affect | -.01 | | | | | | | | |
| 17. GMS-avoidance | .46** | -.16* | | | | | | | |
| 18. GMS-amusement | .04 | .17* | .33** | | | | | | |
| 19. GMS-monetary | .22** | -.04 | .38** | .32** | | | | | |
| 20. GMS-socialization | -.01 | .12* | .26** | .57** | .16* | | | | |
| 21. GMS-excitement | .07 | .28** | .14* | .72** | .34** | .41** | | | |
| 22. GRCS | .14* | .13* | .28** | .51** | .48** | .33** | .52** | | |
| 23. Gambling-related harm | .30** | -.14* | .39** | .04 | .20** | .01 | .04 | .16* | |

* $p < .05$, ** $p < .001$; n = 354

### 3.6 Gambling Severity Scores

Forty one (11.6%) of 354 horse-race and sports betting participants of the current study were probable pathological gamblers according to South Oaks Gambling Screen (SOGS) using a cut-off score of 8, given for the Turkish version (Duvarcı & Varan, 2001). Percent and frequencies of SOGS scores are shown in Table 15. SOGS scores were obtained simply by summing up the 'yes' responses to the SOGS items (*M*= 3.50, *SD*= 2.99, Min= 0, Max= 13, Range= 13, Median= 3).

Table 15. *Frequency and percent of SOGS scores*

| SOGS score | Frequency | % | Cumulative % |
|---|---|---|---|
| 0 | 54 | 15.3 | 15.3 |
| 1 | 65 | 18.4 | 33.6 |
| 2 | 41 | 11.6 | 45.2 |
| 3 | 45 | 12.7 | 57.9 |
| 4 | 32 | 9.0 | 66.9 |
| 5 | 30 | 8.5 | 75.4 |
| 6 | 25 | 7.1 | 82.5 |
| 7 | 21 | 5.9 | 88.4 |
| 8 | 19 | 5.4 | 93.8 |
| 9 | 8 | 2.3 | 96.0 |
| 10 | 5 | 1.4 | 97.5 |
| 11 | 4 | 1.1 | 98.6 |
| 12 | 1 | 0.3 | 98.9 |
| 13 | 4 | 1.1 | 100.0 |
| Total | 354 | 100 | |

*Note*- SOGS: South Oaks Gambling Screen.

### 3.7 The Assessment of SOGS Items with respect to the SOGS Total Scores

Table 16 illustrates the percent of 'yes' responses of the participants of the present study on individual SOGS items with respect to their total scores on SOGS. 'Gambling more than intention' was the most common response of 'yes' within the groups of participants who scored 1 (43%), 2 (68%), 3 (49%), 4 (81), and between 5 and 7 (87%) on SOGS. The most common responses of the individuals who scored 8 or above 8 were 'being criticized about gambling' (90%) and 'feeling guilty about gambling' (90%). None of the participants with less than score of 3 on SOGS reported 'money arguments centered on gambling' and 'borrowed from someone and not paid back as a result of gambling' responses.

Chi square analyses with crosstabulation showed that there were significant differences in the percentages of 'yes' responses of the participants on SOGS items with respect to their total scores on SOGS. These differences were important to present that item distributions varied considerably with respect to the gambling severity. To illustrate, the participants who had score of 8 and above on SOGS were especially the ones who reported borrowing money from household money ($\chi^2$ [5] = 25.03, $p < .001$), relatives ($\chi^2$ [5] = 18.11, $p < .01$), and bank and loan companies ($\chi^2$ [5] = 85.68, $p < .001$). On the other hand the participants who 'claimed to be winning when in fact losing' were the ones who scored 3 and above on SOGS ($\chi^2$ [5] = 26.99, $p < .001$). The participants who reported that they felt they had ever had a problem with gambling were especially the ones who scored 4 and above on SOGS ($\chi^2$ [5] = 95.59, $p < .001$).

Table 16. *Endorsement of individual SOGS items according to the total score*

| SOGS items | SOGS =1 (n=65) % | SOGS =2 (n=41) % | SOGS =3 (n=45) % | SOGS =4 (n=32) % | SOGS =5-7 (n=76) % | SOGS =8+ (n=41) % |
|---|---|---|---|---|---|---|
| 4. Chasing | 6.2 | 14.6 | 24.4 | 25.0 | 34.2 | 62.5 |
| 5. Claimed to be winning when in fact losing | 1.5 | 4.9 | 15.6 | 18.8 | 27.6 | 30.0 |
| 6. Feel you have ever had a problem with gambling | 6.3 | 4.9 | 15.9 | 22.6 | 48.6 | 80.5 |
| 7. Gamble more than intended to | 43.1 | 68.3 | 48.9 | 81.2 | 86.8 | 87.8 |
| 8. People criticized your gambling | 15.4 | 24.4 | 46.7 | 78.1 | 76.3 | 90.2 |
| 9. Felt guilty about gambling | 6.2 | 26.8 | 40.0 | 50.0 | 72.4 | 90.2 |
| 10. Felt like stopping gambling but didn't think you could do it | 1.5 | 12.5 | 22.2 | 18.8 | 44.7 | 63.4 |
| 11. Hiding betting slips, lottery tickets, other signs of gambling | 7.7 | 12.2 | 31.1 | 28.1 | 64.5 | 78.0 |
| 13. Money arguments centered on gambling | 0.0 | 0.0 | 6.8 | 21.9 | 35.1 | 56.1 |
| 14. Borrowed from someone and not paid back as a result of gambling | 0.0 | 0.0 | 6.7 | 3.1 | 14.5 | 48.8 |
| 15. Lost time from work or school due to gambling | 1.5 | 14.6 | 11.1 | 25.0 | 32.9 | 53.7 |
| 16. Borrowed money from | | | | | | |
| Household money | 1.5 | 2.4 | 2.2 | 6.2 | 7.9 | 24.4 |
| Relatives | 1.5 | 2.4 | 4.4 | 3.1 | 5.3 | 19.5 |
| Banks, loan companies | 0.0 | 2.4 | 0.0 | 3.1 | 0.0 | 36.6 |
| Credit cards | 1.5 | 2.4 | 2.2 | 9.4 | 13.2 | 46.3 |
| Loan sharks | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 2.4 |
| Sold personal or family property | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 2.4 |
| Friends | 6.2 | 7.3 | 20.0 | 6.2 | 22.4 | 58.5 |
| Sold gold, other jewelry | 0.0 | 0.0 | 2.2 | 0.0 | 1.3 | 2.4 |

## 3.8 Group Comparisons

Several group comparisons were carried out with respect to demographics, smoking cigarette and drinking alcohol status, stages of change, and gambling severity of the participants. In the first part, participants were compared with respect to their marital status, education level and age across their gambling severity,

gambling-related harm, and gambling participation scores. In the second part, the comparisons were conducted with respect to the participants' status of smoking versus not smoking cigarette and drinking versus not drinking alcohol. In the third part, the participants were compared with respect to their views about quitting gambling and preferred gambling activities across their gambling severity, gambling-related harm, and gambling participation scores. In the final part of this section, the between group comparisons were carried out with respect to gambling severity scores of the participants. The compared variables were several demographic variables, gambling participation indices, gambling-related cognitions and harm, gambling motives, affect, and personality dimensions depending on the hypotheses of the current study. Logarithmically transformed values for average time devoted to gambling, average amount of money wagered in gambling, average amount of money wagered in gambling in terms of personal income and household income, duration of past gambling behavior, and frequency of gambling were used in all group comparisons to improve pairwise linearity and to reduce extreme skewness and kurtosis for those variables.

### 3.8.1 The Association of Demographic Variables with Gambling Severity and Participation

In the beginning of the study, it was hypothesized that gambling severity scores and gambling involvement measures would be higher for the single, lower-educated, and younger participants. To test these hypotheses, separate ANCOVA's

were conducted to compare the various gambling-related measures for single and married gamblers controlling for the effect of age in the first step. According to the results of the analyses, the only significant difference between single and married gamblers was monetary investment of the participants in terms of their personal income. Single participants reported that they were wagering more money in gambling with respect to their personal income as compared to the married participants ($F(1, 347) = 6.81$, $p < .01$). On the other hand, the groups did not differ significantly from each other with respect to their gambling severity scores, gambling-related harm, average time devoted to gambling, average amount of money wagered in gambling, duration of past gambling behavior, frequency of gambling, and percent of money wagered in gambling in terms of household income, although single participants had higher scores on those measures as compared to the married participants. The adjusted mean scores of the participants on the measures are shown in Table 17.

Table 17. *Comparison of gambling behavior of participants with respect to their marital status*

| Variable | Single ($n$ = 210) $M$ ($Sd$) | Married ($n$ = 143) $M$ ($Sd$) | $F$ |
|---|---|---|---|
| Gambling severity | 3.60 (0.22) | 3.36 (0.28) | (1, 350) = 0.37 |
| Gambling related harm | 1.64 (0.05) | 1.48 (0.06) | (1, 350) = 3.37 |
| Average time devoted to gamb. | 0.69 (.004) | 0.60 (0.05) | (1, 347) = 1.62 |
| Average amount of wagering in gamb. | 1.76 (0.04) | 1.67 (0.05) | (1, 347) = 1.42 |
| % of wagering / personal income | 1.31 (0.04) | 1.14 (0.05) | (1, 347) = 6.81* |
| % of wagering / household income | 1.02 (0.04) | 0.94 (0.05) | (1, 346) = 1.21 |
| Duration of gamb. history | 1.83 (0.03) | 1.74 (0.04) | (1, 350) = 2.51 |
| Frequency of gamb. | 0.62 (0.02) | 0.59 (0.03) | (1, 325) = 0.37 |

* $p < .01$

In the second step, ANOVA was conducted to compare the various gambling-related measures and gambling severity scores with respect to educational level of the participants as shown in Table 18. Post-hoc comparisons between groups were carried out using Tukey test. Three groups were formed prior to the group comparison. The first two groups were composed of individuals who were graduated from either elementary or secondary school ($n$ = 78) and high school ($n$ = 137). The third group was composed of individuals who were either university students or graduates ($n$ = 139). The first group of relatively lower educated participants reported more gambling-related harm and gambling expenditure in terms of household income as compared to the third group of participants who were either university students or graduates. Moreover the first group also reported longer period of past gambling behavior as compared to high school graduates. However their duration of past gambling behavior did not differ significantly from the group of participants composed of university students or graduates. On the other hand, reports of gambling severity, time and money devoted to gambling, percent of gambling expenditure in terms of personal income did not differ significantly between the three groups.

In the third step of exploring the associations of gambling severity and participation with demographical characteristics of the participants, three groups of participants were formed with respect to their ages taking into consideration the number of participants in each group. The first group was composed of 116 participants (33%) who were under age 27, the second group was composed of 119 participants (34%) who were between ages 27 and 40, and the third group was composed of 119 participants (34%) who were above age 40. ANOVA was

conducted to explore the differential effect of age on gambling severity, gambling participation, and gambling-related harm variables. Post-hoc comparisons between groups were carried out using Tukey test.

Table 18. *Comparison of gambling behavior with respect to educational level of participants*

| Variables | less than high school ($n$= 78) $M$ ($Sd$) | high school graduate ($n$= 137) $M$ ($Sd$) | university student / graduate ($n$= 139) $M$ ($Sd$) | $F$ |
|---|---|---|---|---|
| Gambling severity | 3.92 (3.07) | 3.15 (2.87) | 3.61 (3.04) | (2, 351) = 1.85 |
| Gambling related harm | $1.74\ (0.84)_{a}$ | $1.61\ (0.71)_{ab}$ | $1.46\ (0.53)_{b}$ | (2, 351) = 4.44* |
| Average time devoted to gamb. | 0.79 (.62) | 0.60 (0.53) | 0.63 (0.57) | (2, 348) = 2.97 |
| Average amount of wagering in gamb. | 1.73 (0.54) | 1.71 (0.53) | 1.73 (0.59) | (2, 348) = 0.04 |
| % of wagering / personal income | 1.26 (0.53) | 1.23 (0.47) | 1.24 (0.54) | (2, 348) = 0.08 |
| % of wagering / household income | $1.11\ (0.54)_{a}$ | $1.01\ (0.51)_{ab}$ | $0.90\ (0.57)_{b}$ | (2, 348) = 3.71* |
| Duration of gamb. history | $1.92\ (0.46)_{a}$ | $1.74\ (0.54)_{b}$ | $1.76\ (0.46)_{ab}$ | (2, 351) = 3.56* |
| Frequency of gamb. | 0.63 (0.24) | 0.60 (0.28) | 0.59 (0.27) | (2, 351) = 0.68 |

* $p < .05$. Note. The mean scores that do not share the same subscript on the same row are significantly different from each other.

According to results of ANOVA as shown in Table 19; the participants who were younger (below the age of 27) reported significantly lower average time devoted to gambling, lower average amount of wagering money in gambling, and lower percent of money wagered in gambling with respect to household income. Moreover, the younger participants reported shorter past gambling behavior as compared to participants who were elder than age 26. The duration of gambling behavior, was more in terms of reported years for the group of participants who were

elder than age 40 as compared to individuals who were between ages of 27 and 40. On the other hand, gambling severity, gambling related harm, percent of average amount of money wagered in gambling with respect to personal income, and frequency of gambling behavior did not differ significantly between the groups.

Table 19. *Comparison of gambling behavior with respect to age groups*

| Variables | ≤ 26 (*n*= 116) *M* (*Sd*) | 27 – 40 (*n*= 119) *M* (*Sd*) | 41 ≥ (*n*= 119) *M* (*Sd*) | *F* |
|---|---|---|---|---|
| Gambling severity | 3.31 (2.72) | 3.79 (3.34) | 3.39 (2.87) | (2, 351) = 0.87 |
| Gambling related harm | 1.52 (0.60) | 1.63 (0.76) | 1.58 (0.68) | (2, 351) = 0.84 |
| Average time devoted to gamb. | $0.49\ (0.49)_a$ | $0.68\ (0.58)_b$ | $0.79\ (0.60)_b$ | (2, 348) = 8.69* |
| Average amount of wagering in gamb. | $1.52\ (0.48)_a$ | $1.82\ (0.53)_b$ | $1.83\ (0.59)_b$ | (2, 348) = 12.44* |
| % of wagering / personal income | 1.21 (0.46) | 1.25 (0.53) | 1.27 (0.53) | (2, 348) = 0.44 |
| % of wagering / household income | $0.77\ (0.49)_a$ | $1.11\ (0.53)_b$ | $1.08\ (0.56)_b$ | (2, 347) = 13.89* |
| Duration of gamb. history | $1.53\ (0.38)_a$ | $1.77\ (0.40)_b$ | $2.06\ (0.53)_c$ | (2, 351) = 42.68* |
| Frequency of gamb. | 0.57 (0.25) | 0.62 (0.26) | 0.62 (0.29) | (2, 351) = 1.62 |

* $p < .001$. *Note.* The mean scores that do not share the same subscript on the same row are significantly different from each other.

Moreover the differences in the gambling severity of the participants were also evaluated according to the age and education levels of the participants by 3 (age: low, middle, high) X 3 (educational level: low, middle, high) between subjects factorial analysis. The major aim in this analysis was especially to detect if there was an interaction effect of age and education level on gambling severity scores of the participants. As can be seen in Table 20, the results of the analysis revealed that there

were no main effects of age and education levels on gambling severity scores of the participants. Moreover, the interaction effect of age and education levels on gambling severity scores of the participants was also not significant.

Table 20. *Comparison of gambling severity scores according to the age and education levels*

| Source | SS | *df* | MS | *F* |
|---|---|---|---|---|
| Age | 16.87 | 2 | 8.44 | 0.39 |
| Education level | 25.80 | 2 | 12.90 | 0.24 |
| Age X Education level | 37.59 | 4 | 9.39 | 0.38 |
| Error | 3066.36 | 345 | 8.88 | |

### 3.8.2 The Association of Smoking and Drinking Alcohol with Gambling Severity and Participation

In the beginning of the study, it was hypothesized that gambling severity scores and gambling involvement measures would be higher for the cigarette smoking and alcohol drinking participants. To test this hypothesis, two groups were formed for each of participants who reported that they smoked and who did not smoke; and for participants who reported that they drank alcohol and who did not drink alcohol. Smoking group was composed of 235 participants (66%) as compared to 118 participants (34%) of the non-smoking group. On the other hand the number of the participants of the group who reported that they drank alcohol was 204 (58%) whereas the number of the participants of the group who reported that they did not

drink alcohol was 150 (42%). Independent samples t-tests were conducted to compare the various gambling-related measures with respect to smoking cigarette and drinking alcohol as shown in Table 21. Similar comparison was not conducted for substance using participants since the participants who reported that they were using substance was limited to only 12 individuals.

According to the results of the analyses, there was no difference in scores for smoking and non smoking participants with respect to the duration of past gambling history. On the other hand the participants who reported that they were smoking had higher gambling severity scores measured by SOGS as compared to the participants who reported that they were not smoking. In addition, average time devoted to gambling, average amount of money wagered in gambling, frequency of gambling, percent of wagered money with respect to personal and household incomes were significantly higher for the smoking group as cpmpared to the non-smoking group.

According to the results of the analysis, the participants who reported that they drank alcohol and the participants who reported that they did not drink alcohol were not significantly different with respect to their scores of gambling severity, average time devoted to gambling, duration of gambling history, frequency of gambling, and percent of wagering money in gambling in terms of both personal income and household income. On the other hand, amount of money wagered in gambling was found to be significantly higher among participants who reported that they drank alcohol as compared to participants who reported that they did not drink alcohol.

Table 21. *Comparison of gambling behavior with respect to smoking cigarette and drinking alcohol*

| variables | cigarette: smokes *n* = 235 *M* (*Sd*) | cigarette: doesn't smoke *n* = 118 *M* (*Sd*) | *t* | alcohol: drinks *n* = 204 *M* (*Sd*) | alcohol: doesn't drink *n* = 150 *M* (*Sd*) | *t* |
|---|---|---|---|---|---|---|
| Gambling severity | 3.80 (3.13) | 2.92 (2.60) | (351) = 2.63** | 3.35 (2.76) | 3.70 (3.28) | (352) = -1.08 |
| Average time devoted to gambling | 0.72 (0.57) | 0.52 (0.55) | (348) = 3.17** | 0.66 (.54) | 0.65 (0.61) | (349) = 0.25 |
| Average amount of wagering in gambling | 1.79 (0.55) | 1.59 (0.54) | (348) = 3.14** | 1.78 (0.56) | 1.64 (0.54) | (349) = 2.40* |
| Duration of gambling history | 1.82 (0.47) | 1.75 (0.54) | (351) = 1.19 | 1.82 (0.45) | 1.74 (0.54) | (352) = 1.51 |
| Frequency of gambling | 0.63 (0.25) | 0.55 (0.29) | (351) = 2.79** | 0.62 (0.26) | 0.59 (0.28) | (352) = 1.09 |
| % of wagering / personal income | 1.29 (0.52) | 1.14 (0.48) | (348) = 2.67** | 1.28 (0.50) | 1.19 (0.51) | (349) = 1.71 |
| % of wagering / household income | 1.03 (0.55) | 0.91 (0.53) | (347) = 2.01* | 1.01 (0.55) | 0.96 (0.55) | (348) = 0.97 |

* $p < .05$, ** $p < .01$

### 3.8.3 The Association of the Participants' Stages of Change with Gambling Severity and Participation

One of the research questions of the current study was if the stages of change of the participants would be associated with gambling severity and gambling participation. To answer this question, the participants of the present study were asked to determine the suitable statements in order to investigate their views with respect to quitting gambling modeled from stages of change of transtheoretical model (Prochaska & Norcross, 2003). Since the participants were regular gamblers,

maintenance and action stages were omitted. Three statements were designed to meet pre-contemplation, contemplation, and preparation stages. In the analysis, the group of participants who stated that they contemplated about the difficulties of gambling and in relation planned to quit gambling (contemplation stage) within six months, and the group of participants who stated that they made some arrangements not to gamble and tried not to gamble (preparation stage) were treated as a single group of 'contemplators'. Both of those groups of contemplators were hypothesized to be sharing common features as compared to the pre-contemplators who stated that they did not contemplate about changing their gambling behavior within six months. Additionally, this also contributed to a better sample distribution of the groups for comparative purpose when relatively larger number of pre-contemplators (232 participants) was considered as compared to the rest of the sample.

An independent samples t-test was conducted to compare the various gambling-related measures for contemplators and pre-contemplators as shown in Table 22. According to the results of the analyses, although pre-contemplators reported more average amount of gambling expenditure, more frequent gambling behavior, and longer past of gambling behavior as compared to the contemplators at significant level, gambling severity and gambling-related harm of the latter group were higher as compared to pre-contemplators. On the other hand, the differences between the two groups were not significantly different with respect to average time devoted to gambling and percents of wagered money in gambling in terms of personal and household incomes.

Table 22. *Comparison of participants with respect to their view of quitting gambling*

| Variable | Pre-comtemplators (*n* = 232) *M* (*Sd*) | Contemplators (*n* = 92) *M* (*Sd*) | *t* |
|---|---|---|---|
| Gambling severity | 3.11 (2.77) | 4.05 (3.18) | (322) = -2.64* |
| Gambling related harm | 1.49 (0.64) | 1.79 (0.74) | (322) = -3.53** |
| Average time devoted to gamb. | 0.68 (0.58) | 0.55 (0.58) | (320) = 1.89 |
| Average amount of wagering in gamb. | 1.77 (0.54) | 1.63 (0.59) | (321) = 1.99* |
| % of wagering / personal income | 1.27 (0.49) | 1.17 (0.57) | (321) = 1.62 |
| % of wagering / household income | 1.01 (0.53) | 0.93 (0.59) | (320) = 1.18 |
| Duration of gamb. history | 1.85 (0.47) | 1.66 (0.50) | (322) = 3.22* |
| Frequency of gamb. | 0.63 (0.26) | 0.54 (0.27) | (332) = 2.65* |

* $p < .01$, ** $p < .001$

### 3.8.4 The Association of the Preferred Gambling Activity with Gambling Severity and Harm

Independent samples t-test was carried out to investigate if gambling severity and gambling related harm scores of the participants would differ according to their most frequent gambling activity. One of the groups was composed of 151 individuals (43% of the sample) who reported that their frequent gambling activity was betting on horse races. The other group was composed of 175 individuals (49% of the sample) who reported that their most frequent gambling activity was betting on sports. The rest of 28 individuals either reported another frequent gambling activity or did not report any frequent gambling activity and thus were excluded from the analysis. The means and standard deviations of gambling severity and gambling related harm scores in terms of preferred gambling activity are presented in Table 23.

According to the results of the analyses, the participants who reported that they gambled more frequently on horse races had significantly higher scores both on gambling severity and on gambling-related harm as compared to the participants who reported that they gambled more frequently on sports.

Table 23. *Comparison of participants with respect to preferred gambling activity*

| | Horse race ($n$ = 151) $M$ ($Sd$) | Sports ($n$ = 175) $M$ ($Sd$) | $t$ |
|---|---|---|---|
| Gambling severity | 4.19 (3.14) | 3.08 (2.84) | (324) = 3.33* |
| Gambling-related harm | 1.74 (0.79) | 1.48 (0.58) | (324) = 3.39* |

* $p < .01$

### 3.8.5 Comparison of Participants with Respect to their Gambling Severity Scores

In the beginning of the current study, it was hypothesized that higher neuroticism, negative affect, avoidance motive, gambling participation, and more gambling-related cognitions of the participants would be associated with gambling severity. To test this hypothesis, an independent samples t-test was conducted to compare the various gambling-related measures for probable pathological gamblers and the rest of the participants of the current study as shown in Table 24. The cut-off score to determine the probable pathological gamblers was decided as score 8 and above with reference to the adaptation study of SOGS in the Turkish culture (Duvarcı & Varan, 2001). The group of probable pathological gambling was composed of 41 participants that was approximately half quarter of whole sample.

Within the frame of gambling participation, probable pathological gamblers scored significantly higher on average time devoted to gambling, average amount of money wagered in gambling, frequency of gambling, and percent of wagering in terms of personal and household incomes as compared to the rest of the gamblers. In spite of the differences between the groups with respect to percent of wagering in gambling in terms of personal and household incomes, it is important to note that non-pathological gamblers reported that they wagered 6.9 % and 4.4 % of their personal and household income in gambling respectively. The groups did not differ significantly with respect to the total number of gambling types and duration of past gambling behavior. According to the results of the analysis there was no difference in scores for the probable pathological gamblers and the non-pathological gamblers with respect to their age, personal and household incomes.

Probable pathological gamblers scored significantly higher than non-pathological gamblers on neuroticism scale whereas the groups did not differ from each other with respect to extraversion personality dimensions measured by EPQR-A. When the affect of the participants were compared, the probable pathological gamblers reported significantly more negative affect and reported significantly less positive affect as measured by PANAS when compared to the non-pathological gamblers. With respect to the gambling-related cognitions, probable pathological gambling group reported more gambling-related cognitions as compared to the non-pathological gambling group. When the gambling motives were compared between the groups, it was found that reported avoidance, monetary, and excitement motives were higher among pathological gamblers as compared to the rest of the sample. The

participants of the groups did not differ significantly with respect to their amusement and socialization motives scores. Pathological gambling group also reported higher gambling-related harm scores as compared to the non-pathological gambling group.

Table 24. *Comparison of probable pathological gamblers with non-pathological gamblers*

| Variable | Non-pathological gamblers ($n$ = 313) $M$ ($Sd$) | Probable pathological gamblers ($n$ = 41) $M$ ($Sd$) | $t$ |
|---|---|---|---|
| Age | 35.72 (13.51) | 36.22 (13.66) | (352) = -0.22 |
| Personal income | 1551.10 (1090.73) | 1622.00 (1099.89) | (352) = -0.39 |
| Household income | 2580.01 (1281.83) | 2353.70 (1333.44) | (351) = 1.06 |
| Average time devoted to gamb. | 0.60 (0.56) | 1.06 (0.52) | (349) = -4.89** |
| Average amount of wagering in gamb. | 1.67 (0.54) | 2.15 (0.47) | (349) = -5.36** |
| % of wagering / personal income | 1.19 (0.49) | 1.65 (0.40) | (349) = -5.56** |
| % of wagering / household income | 0.92 (0.53) | 1.46 (0.45) | (348) = -6.03** |
| Number of gamb. types | 3.93 (2.36) | 4.61 (2.65) | (352) = -1.72 |
| Duration of gamb. history | 1.78 (0.49) | 1.86 (0.51) | (352) = -1.00 |
| Frequency of gamb. | 0.59 (0.27) | 0.73 (0.15) | (352) = -3.39* |
| Extraversion | 4.46 (1.73) | 3.90 (1.92) | (352) = 1.90 |
| Neuroticism | 2.40 (1.73) | 3.68 (1.86) | (352) = -4.41** |
| Positive affect | 3.49 (0.78) | 3.14 (0.94) | (352) = 2.62* |
| Negative affect | 1.94 (0.68) | 2.37 (0.75) | (352) = -3.69** |
| Gambling related cognitions | 2.81 (0.98) | 3.53 (0.91) | (352) = -4.44** |
| Avoidance motive | 1.65 (0.72) | 2.58 (1.13) | (351) = -7.25** |
| Amusement motive | 2.89 (1.03) | 3.21 (0.99) | (351) = -1.89 |
| Monetary motive | 2.69 (1.00) | 3.44 (0.94) | (351) = -4.55** |
| Socialization motive | 2.32 (1.10) | 2.59 (1.17) | (351) = -1.41 |
| Excitement motive | 3.43 (0.93) | 3.75 (1.05) | (351) = -2.08* |
| Gambling related harm | 1.47 (0.58) | 2.40 (0.84) | (352) = -9.09** |

* $p < .01$, ** $p < .001$

The scores of the participants on SOGS were also utilized to form another set of groups of individuals with respect to their gambling severity. Three approximately equal groups were formed with respect to the number of participants in each group. The group of individuals within the range of half standard deviation (1.49) above and below the mean (3.50) was called at-risk gamblers. The other two groups below and above this range were called low-risk and problem gamblers respectively. Thus, three groups were formed with respect to participants' gambling severity as measured by SOGS. Low-risk gamblers were composed of the participants who scored 0 or 1 according to SOGS whereas at-risk gamblers were composed of individuals who scored between the range of 2 and 4 according to SOGS. The group of the participants who scored 5 or higher according to SOGS was labeled as problem gamblers. The threshold of 5 is the most commonly used cut-off value for SOGS in studies usually referred as 'probable pathological gambling' (e.g., Cox et al., 2000; Matthews et al., 2009). This group was referred as 'problem gambling' instead of 'probable pathological gambling' within this study deliberately with caution since the proposed cut-off score according to the adaptation of the SOGS in the Turkish culture is 8 (Duvarcı & Varan, 2001). The groups of the present study with respect to gambling severity were composed of 119 (34%), 118 (33%), and 117 (33%) participants for each of low-risk, at-risk, and problem gambling groups respectively.

One way between-groups of analysis of variance (ANOVA) was conducted to compare the variables of age, income, gambling participation, personality, affect, gambling related cognitions, motivation to gamble, and gambling-related harm across groups formed with respect to gambling severity. Post-hoc comparisons

between groups were carried out using Tukey test. According to results of ANOVA as shown in Table 25; low-risk, at-risk, and problem gamblers did not differ significantly with respect to their age, personal and household income, extraversion personality features and socialization motive to gamble. Within the frame of gambling participation, problem gamblers scored significantly higher as compared to at-risk and low-risk gamblers; and at-risk gamblers scored significantly higher as compared to low-risk gamblers on average time devoted to gambling, average amount of money wagered in gambling, and percent of wagering in terms of personal and household incomes. At-risk and problem gamblers did not have significantly different scores with respect to total number of gambling types, duration of gambling history and frequency of gambling. On the other hand, both of these groups had significantly higher scores on these measures as compared to low-risk gamblers.

Problem gamblers scored significantly higher than low-risk and at-risk gamblers on neuroticism scale whereas the groups did not differ from each other with respect to extraversion personality dimensions measured by EPQR-A. Low-risk and at-risk gamblers did not differ significantly from each other with respect to their neuroticism scores. When the affect of the participants were compared in terms of gambling severity groups, it was found that problem gamblers reported lower positive affect as compared to at-risk gamblers. Low-risk gambling group was not statistically different from at-risk and problem gambling groups with respect to the reported positive affect. On the other hand, report of negative affect measured by PANAS was higher for at-risk and problem gambling groups as compared to report of negative affect for low-risk group.

Table 25. *Comparison of gamblers with respect to gambling severity on various measures*

| Variable | Low-risk gamblers (*n* = 119) *M* (*Sd*) | At-risk gamblers (*n* = 118) *M* (*Sd*) | Problem gamblers (*n* = 117) *M* (*Sd*) | *F* |
|---|---|---|---|---|
| Age | 35.10 (12.99) | 36.01 (14.13) | 36.22 (13.49) | (2, 351) = 0.23 |
| Personal income | 1500.00 (974.24) | 1616.90 (1124.57) | 1662.40 (1166.76) | (2, 351) = 0.79 |
| Household income | 2500.00 (1205.40) | 2542.40 (1322.99) | 2619.70 (1340.11) | (2, 350) = 0.26 |
| Average time devoted to gamb. | $0.36\ (0.51)_a$ | $0.71\ (0.55)_b$ | $0.89\ (0.52)_c$ | (2, 348) = 31.62** |
| Average amount of wagering in gamb. | $1.45\ (0.48)_a$ | $1.73\ (0.49)_b$ | $2.01\ (0.54)_c$ | (2, 348) = 35.47** |
| % of wagering / personal income | $0.97\ (0.50)_a$ | $1.27\ (0.43)_b$ | $1.49\ (0.44)_c$ | (2, 348) = 39.31** |
| % of wagering / household income | $0.71\ (0.49)_a$ | $0.99\ (0.49)_b$ | $1.27\ (0.52)_c$ | (2, 347) = 35.29** |
| Number of gamb. types | $3.19\ (1.93)_a$ | $4.44\ (2.55)_b$ | $4.39\ (2.47)_b$ | (2, 351) = 10.86** |
| Duration of gamb. history | $1.67\ (0.55)_a$ | $1.84\ (0.43)_b$ | $1.86\ (0.46)_b$ | (2, 351) = 5.60* |
| Frequency of gamb. | $0.51\ (0.29)_a$ | $0.62\ (0.26)_b$ | $0.68\ (0.22)_b$ | (2, 351) = 12.20** |
| Extraversion | 4.68 (1.58) | 4.29 (1.83) | 4.19 (1.83) | (2, 351) = 2.51 |
| Neuroticism | $2.11\ (1.62)_a$ | $2.34\ (1.67)_a$ | $3.21\ (1.90)_b$ | (2, 351) = 13.31** |
| Positive affect | $3.41\ (0.81)_{ab}$ | $3.65\ (0.71)_a$ | $3.29\ (0.86)_b$ | (2, 351) = 6.19* |
| Negative affect | $1.77\ (0.61)_a$ | $2.02\ (0.73)_b$ | $2.19\ (0.70)_b$ | (2, 351) = 11.42** |
| Gambling related cognitions | $2.36\ (0.85)_a$ | $3.06\ (0.94)_b$ | $3.27\ (0.97)_b$ | (2, 350) = 31.25** |
| Avoidance motive | $1.49\ (0.71)_a$ | $1.65\ (0.68)_a$ | $2.12\ (0.97)_b$ | (2, 350) = 19.46** |
| Amusement motive | $2.54\ (1.02)_a$ | $3.13\ (0.97)_b$ | $3.11\ (0.99)_b$ | (2, 350) = 13.55** |
| Monetary motive | $2.33\ (0.95)_a$ | $2.83\ (0.97)_b$ | $3.17\ (1.00)_c$ | (2, 350) = 21.85** |
| Socialization motive | 2.21 (1.20) | 2.44 (1.08) | 2.41 (1.05) | (2, 350) = 1.45 |
| Excitement motive | $3.08\ (0.95)_a$ | $3.65\ (0.85)_b$ | $3.66\ (0.91)_b$ | (2, 350) = 16.08** |
| Gambling related harm | $1.27\ (0.49)_a$ | $1.44\ (0.48)_a$ | $2.02\ (0.79)_b$ | (2, 351) = 49.72** |

*Note 1.* * $p < .01$, ** $p < .001$.
*Note 2.* The mean scores that do not share the same subscript on the same row are significantly different from each other.

Both at-risk and problem gamblers reported more gambling-related cognitions as compared to low-risk gamblers measured by GRCS. The difference between at-risk and problem gamblers with respect to gambling related cognitions was not statistically significant although gambling cognitions of problem gamblers were more than at-risk gamblers. When the gambling motives were compared across three groups, it was found that both at-risk and problem gambling groups reported more amusement and excitement motives as compared to low-risk gambling group. With respect to avoidance motive, low-risk and at-risk groups scored lower as compared to problem-gambling group. Moreover, problem-gambling group also reported more monetary motive to gamble as compared to low-risk and at-risk gambling groups, and at-risk gambling group reported more monetary motive to gamble as compared to low-risk gambling group. Finally, reported gambling-related harm was higher for problem gamblers as compared to low-risk gamblers and at-risk gamblers.

### 3.8.6 The Effects of Gambling Motives and Cognitions on Gambling Participation

Separate one-way MANOVA's were conducted to explore the gambling motives and the gambling-related cognitions differences in gambling participation to test the hypotheses of the current study which suggested that higher gambling participation would be associated with more gambling-related cognitions and motives. The indices of gambling participation were composed of average amount of

time devoted to gambling-related affairs, average amount of money wagered in gambling, and average frequency of gambling as reported by the participants. On the other hand, groups with respect to motives and cognitions were formed through median split of the variable scores. Low and high groups were formed with respect to gambling motives of avoidance, monetary, amusement, excitement, socialization and with respect to gambling-related cognitions.

There were statistically significant differences between groups of individuals who had low and high scores of avoidance ($F(3, 345) = 3.53$, $p < .05$, Wilks' $\lambda = .97$, partial $\eta^2 = .03$), monetary ($F(3, 345) = 2.97$, $p < .05$, Wilks' $\lambda = .98$, partial $\eta^2 = .03$), amusement ($F(3, 345) = 12.89$, $p < .001$, Wilks' $\lambda = .90$, partial $\eta^2 = .10$), excitement ($F(3, 345) = 14.34$, $p < .001$, Wilks' $\lambda = .89$, partial $\eta^2 = .11$) motives to gamble on the combined dependent variables. However, the participants who had high or low scores of socialization motive to gamble were not different with respect to their scores on combined gambling involvement measures ($F(3, 345) = 2.21$, $p < .05$, Wilks' $\lambda = .98$, partial $\eta^2 = .02$). The differences between groups of individuals who had low and high scores of gambling-related cognitions were also significant in gambling involvement ($F(3, 345) = 7.16$, $p < .01$, Wilks' $\lambda = .94$, partial $\eta^2 = .06$).

Bonferroni adjusted alpha level of .017 was used for statistical significance, when the results of the dependent variables were considered separately. The mean and standard deviation scores for the groups are shown in Table 26. For avoidance motive, the participants who had higher avoidance motive scores only reported higher time advocated to gambling-related affairs ($F(1, 347) = 10.34$, $p = .001$, partial $\eta^2 = .02$). Similarly, for monetary motive, the participants who had higher

monetary motive scores reported higher time advocated to gambling-related affairs ($F(1, 347) = 8.41$, $p = .004$, partial $\eta^2 = .03$). On the other hand, the participants who had higher excitement motive scores reported higher amount of time advocated to gambling-related affairs ($F(1, 347) = 42.62$, $p = .000$, partial $\eta^2 = .11$), more amount of money wagered in gambling ($F(1, 347) = 14.74$, $p = .000$, partial $\eta^2 = .04$), and more frequent gambling behavior ($F(1, 347) = 15.30$, $p = .000$, partial $\eta^2 = .05$). Similarly, the participants who had higher amusement motive scores reported higher amount of time advocated to gambling-related affairs ($F(1, 347) = 36.91$, $p = .000$, partial $\eta^2 = .10$), more amount of money wagered in gambling ($F(1, 347) = 18.96$, $p = .000$, partial $\eta^2 = .05$), and more frequent gambling behavior ($F(1, 347) = 13.98$, $p = .000$, partial $\eta^2 = .04$).

Table 26. *Means and standard deviations of gambling involvement scores across motive and cognition groups*

| | time<br>*M* (*Sd*) | money<br>*M* (*Sd*) | frequency<br>*M* (*Sd*) |
|---|---|---|---|
| Low avoidance motive | 0.56 (0.56) | 1.66 (0.59) | 0.58 (0.28) |
| High avoidance motive | 0.75 (0.57) | 1.79 (0.51) | 0.64 (0.2) |
| Low monetary motive | 0.56 (.56) | 1.66 (0.58) | 0.58 (0.28) |
| High monetary motive | 0.74 (0.57) | 1.79 (0.52) | 0.63 (0.25) |
| Low excitement motive | 0.46 (0.53) | 1.61 (0.55) | 0.55 (0.28) |
| High excitement motive | 0.84 (0.55) | 1.84 (0.54) | 0.66 (0.24) |
| Low amusement motive | 0.48 (0.55) | 1.60 (0.55) | 0.55 (0.28) |
| High amusement motive | 0.83 (0.54) | 1.85 (0.54) | 0.66 (0.24) |
| Low socialization motive | 0.59 (0.55) | 1.72 (0.59) | 0.59 (0.28) |
| High socialization motive | 0.74 (0.58) | 1.76 (0.52) | 0.62 (0.27) |
| Low gambling cognitions | 0.55 (0.59) | 1.65 (0.60) | 0.55 (0.29) |
| High gambling cognitions | 0.78 (0.52) | 1.83 (0.49) | 0.66 (0.24) |

With respect to the gambling-related cognitions, the participants who had more gambling-related cognitions reported higher amount of time advocated to gambling-related affairs ($F(1, 347) = 18.13$, $p = .000$, partial $\eta^2 = .05$), more amount of money wagered in gambling ($F(1, 347) = 12.49$, $p = .000$, partial $\eta^2 = .04$), and more frequent gambling behavior ($F(1, 347) = 11.89$, $p = .001$, partial $\eta^2 = .03$) as compared to the participants who had less gambling-related cognitions.

### 3.8.7 The Effects of Gambling Motives on Gambling Severity & Harm

In the beginning of the current study it was expected that gambling for avoidance motive would be more associated with gambling severity and harm as compared to gambling for excitement, amusement, monetary, and socialization motives. Thus three separate one way between-groups of analyses of variance was conducted to explore the differential effect of gambling motives with respect to avoidance motive on gambling-related harm and gambling severity. Participants were divided into four groups according to their combined scores on gambling motives. High and low groups were determined through median-split for each of four motives as shown in Figure 4. In avoidance & amusement groups; group 1 was composed of participants who scored relatively high on avoidance and amusement motives, group 2 was composed of participants who scored relatively high on avoidance and low on amusement motives, group 3 was composed of participants who scored relatively low on avoidance and amusement motives, group 4 was composed of participants who scored relatively low on avoidance and high on

amusement motives. The same group compositions were repeated for avoidance & monetary groups and avoidance & excitement groups. The same analysis could not be carried out for avoidance-socialization groups since groups 1 (high on avoidance and socialization motives) and 4 (low on avoidance and high on socialization motives) did not have any participants for the current study.

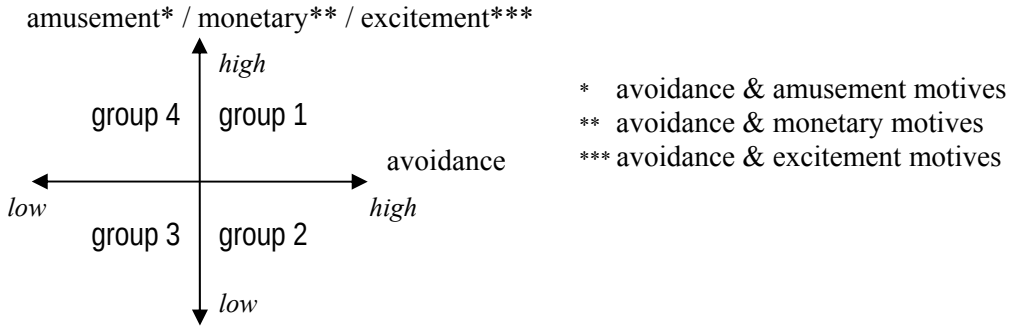


Figure 4. *Groups based on level of motives to gamble*

According to the results of the analysis, avoidance & amusement motives groups significantly differed from each other with respect to both gambling-related harm ($F(3, 349) = 9.93$, $p < .001$) and gambling severity ($F(3, 349) = 16.95$, $p < .001$) scores as shown in Table 27. Post-hoc comparisons were carried out using Tukey test. Group 1 and group 2 participants reported significantly higher harm as compared to group 3 and group 4 participants. On the other hand group 1 participants reported higher gambling severity than group 3 and group 4 participants. Group 2 participants reported higher gambling severity than group 3 participants.

Table 27. *Comparison of gambling severity and gambling-related harm with respect to gambling motives*

| *AVOIDANCE & AMUSEMENT MOTIVES* | | | | | | |
|---|---|---|---|---|---|---|
| | | Dependent variable: gambling-related harm | | | Dependent variable: gambling severity | |
| group | *n* | *M* | *Sd* | *n* | *M* | *Sd* |
| 1. high-avoidance & high-amusement | 118 | $1.77_{a}$ | 0.72 | 118 | $4.72_{a}$ | 3.16 |
| 2. high-avoidance & low-amusement | 59 | $1.78_{a}$ | 0.85 | 59 | $3.92_{ab}$ | 2.91 |
| 3. low-avoidance & low-amusement | 116 | $1.38_{b}$ | 0.60 | 116 | $2.15_{c}$ | 2.59 |
| 4. low-avoidance & high-amusement | 60 | $1.58_{b}$ | 0.69 | 60 | $3.28_{bc}$ | 2.37 |
| | | $F(3, 349) = 9.93, p < .001$ | | | $F(3, 349) = 16.95, p < .001$ | |
| *AVOIDANCE & MONETARY MOTIVES* | | | | | | |
| group | *n* | *M* | *Sd* | *n* | *M* | *Sd* |
| 1. high-avoidance & high-monetary | 119 | $1.78_{ab}$ | 0.71 | 119 | $5.09_{a}$ | 3.13 |
| 2. high-avoidance & low-monetary | 58 | $1.74_{bd}$ | 0.87 | 58 | $3.14_{b}$ | 2.56 |
| 3. low-avoidance & low-monetary | 111 | $1.35_{c}$ | 0.51 | 111 | $2.32_{b}$ | 2.51 |
| 4. low-avoidance & high-monetary | 65 | $1.44_{cd}$ | 0.58 | 65 | $2.91_{b}$ | 2.63 |
| | | $F(3, 349) = 10.22, p < .001$ | | | $F(3, 349) = 21.29, p < .001$ | |
| *AVOIDANCE & EXCITEMENT MOTIVES* | | | | | | |
| group | *n* | *M* | *Sd* | *n* | *M* | *Sd* |
| 1. high-avoidance & high-excitement | 102 | $1.74_{a}$ | 0.68 | 119 | $4.73_{a}$ | 3.02 |
| 2. high-avoidance & low- excitement | 75 | $1.81_{a}$ | 0.86 | 58 | $4.09_{ab}$ | 3.16 |
| 3. low-avoidance & low- excitement | 98 | $1.34_{b}$ | 0.57 | 111 | $2.03_{c}$ | 2.51 |
| 4. low-avoidance & high-excitement | 78 | $1.44_{b}$ | 0.50 | 65 | $3.17_{b}$ | 2.50 |
| | | $F(3, 349) = 10.47, p < .001$ | | | $F(3, 349) = 16.83, p < .001$ | |

*Note.* The mean scores that do not share the same subscript on the same column are significantly different from each other.

Avoidance & monetary motives groups also significantly differed from each other with respect to both gambling-related harm ($F(3, 349) = 10.22$, $p < .001$) and gambling severity ($F(3, 349) = 21.49$, $p < .001$). According to results of the post-hoc comparisons carried out using Tukey test, group 1 participants reported significantly more gambling-related harm as compared group 3 and group 4 whereas group 2

participants reported significantly more harm as compared to group 3 participants. With respect to gambling severity; group 1 participants reported significantly more severity as compared to other three groups.

Avoidance & excitement motives groups also significantly differed from each other with respect to both gambling-related harm ($F(3, 349) = 10.47$, $p < .001$) and gambling severity ($F(3, 349) = 16.83$, $p < .001$). Group 1 and group 2 participants reported significantly higher gambling-related harm as compared to group 3 and group 4 participants. On the other hand group 3 participants reported significantly lower gambling severity scores as compared to other groups. In addition, group 4 participants reported significantly less gambling severity scores as compared to group 1 participants.

ANCOVA was also conducted to explore the differential effect of gambling motives with respect to avoidance motive with the similar design mentioned above. Covariates were gambling severity for the dependent variable gambling-related harm and wagered money for gambling in terms of household income for the dependent variable gambling severity as the robust related correlates of the dependent variables according to results of the present study. The adjusted means for each group together with significance tests results are shown in Table 28. The same significant *F* values were found after the adjustment for covariates. The only different finding as compared to the ANOVA mentioned above for the dependent variable gambling severity was in avoidance & excitement groups. The significant differences between group 3 and group 4 participants with respect to gambling severity disappeared according to results after adjustment for monetary gambling investment.

Table 28. *Comparison of gambling severity and gambling-related harm with respect to gambling motives*

| *AVOIDANCE & AMUSEMENT MOTIVES* | | | | | | |
|---|---|---|---|---|---|---|
| | | Dependent variable: gambling-related harm Covariate: gambling severity | | | Dependent variable: gambling severity Covariate: gambling investment | |
| group | *n* | *M* | *Sd* | *n* | *M* | *Sd* |
| 1. high-avoidance & high-amusement | 118 | $1.62_{ab}$ | 0.06 | 117 | $4.61_{a}$ | 0.25 |
| 2. high-avoidance & low-amusement | 59 | $1.73_{a}$ | 0.08 | 57 | $3.70_{ab}$ | 0.35 |
| 3. low-avoidance & low-amusement | 116 | $1.53_{ab}$ | 0.06 | 115 | $2.38_{c}$ | 0.25 |
| 4. low-avoidance & high-amusement | 60 | $1.42_{b}$ | 0.08 | 60 | $3.18_{bc}$ | 0.34 |
| | | $F(3, 348) = 3.12$, $p < .05$ | | | $F(3, 344) = 13.65$, $p < .001$ | |
| *AVOIDANCE & MONETARY MOTIVES* | | | | | | |
| group | *n* | *M* | *Sd* | *n* | *M* | *Sd* |
| 1. high-avoidance & high-monetary | 119 | $1.59_{a}$ | 0.06 | 118 | $4.95_{a}$ | 0.24 |
| 2. high-avoidance & low-monetary | 58 | $1.78_{b}$ | 0.08 | 56 | $2.95_{b}$ | 0.35 |
| 3. low-avoidance & low-monetary | 111 | $1.49_{a}$ | 0.06 | 111 | $2.46_{b}$ | 0.25 |
| 4. low-avoidance & high-monetary | 65 | $1.51_{a}$ | 0.07 | 64 | $3.00_{b}$ | 0.32 |
| | | $F(3, 348) = 3.67$, $p < .05$ | | | $F(3, 344) = 19.58$, $p < .001$ | |
| *AVOIDANCE & EXCITEMENT MOTIVES* | | | | | | |
| group | *n* | *M* | *Sd* | *n* | *M* | *Sd* |
| 1. high-avoidance & high-excitement | 102 | $1.59_{ab}$ | 0.06 | 102 | $4.59_{a}$ | 0.26 |
| 2. high-avoidance & low- excitement | 75 | $1.75_{a}$ | 0.07 | 72 | $3.91_{ab}$ | 0.31 |
| 3. low-avoidance & low- excitement | 98 | $1.51_{ab}$ | 0.06 | 97 | $2.58_{c}$ | 0.27 |
| 4. low-avoidance & high-excitement | 78 | $1.48_{b}$ | 0.07 | 78 | $3.15_{bc}$ | 0.30 |
| | | $F(3, 348) = 3.26$, $p < .05$ | | | $F(3, 344) = 13.50$, $p < .001$ | |

*Note.* The mean scores that do not share the same subscript on the same column are significantly different from each other at .05 level.

With respect to the dependent variable gambling-related harm, group 2 participants reported more harm than group 4 participants after adjustment for gambling severity in both avoidance & amusement and avoidance & excitement

groups. For the avoidance & monetary groups, group 2 reported higher gambling-related harm as compared to other groups after adjustment for gambling severity. Thus, ANCOVA in prediction of gambling-related harm especially showed the negative impact of gambling for relatively higher avoidance motive. Higher avoidance motive scores of the participants of the current study together with lower monetary or excitement motive scores were found to be associated with higher gambling-related harm scores of the participants as compared to relatively higher excitement or monetary motive scores together with lower avoidance motive scores.

## 3.9 Predictors of Gambling Severity and Gambling-Related Harm

In this section of the results chapter, findings of the regression analyses to test the mediational role of gambling participation between gambling-related cognitions / motives and gambling severity are outlined. Moreover, findings of the several hierarchical multiple regression analyses and a logistic regression analysis conducted to determine the associates of gambling severity and harm scores of the participants are presented. Finally, the results of the negative affect regulation model developed and tested for the present study is presented in the last section of this chapter.

### 3.9.1 Mediational Role of Gambling Involvement in Predicting Gambling Severity

It was hypothesized that gambling involvement would mediate the relationship both between gambling motives and gambling severity and between

gambling-related cognitions and gambling severity. Several measures were used to assess gambling involvement in the present study such as amount of money wagered in gambling, amount of time devoted to gambling, and frequency of gambling behavior. All measures of gambling participation were correlated with each other as shown previously in Table 14 (pp. 114-115). To select one of those measures as a mediator variable in the mediation analyses was decided rather than testing mediator roles of all gambling involvement measures due to their high conceptual interdependence and related high inter-correlation scores. The selected measure was devoted time to gambling-related affairs. First of all, it was one of the highest correlates of gambling severity together with average amount of gambling expenditure. Secondly, it was preferred against gambling expenditure since time measure was hypothesized to be less influenced by personal and household income, economical standing and monetary responsibilities of the participants, average expenditure kind of parameters as compared to gambling expenditure measure.

The criteria list suggested by Baron and Kenny (1986) were followed to test the mediational models suggested in this section. According to the criteria suggested by Baron and Kenny (1986) i.) independent variable must be related to the dependent variable; ii.) independent variable must be related to the mediator, iii.) mediator must be related to the dependent variable; and iv.) independent variable and dependent variable relationship reduces or eliminates with the control for the mediator variable. Five separate mediation analyses were performed following the above criteria. In the first regression analyses, independent variable was entered in the equation followed by entrance of the mediator variable in the second step of the regression analysis to

test gambling severity. In the second regression analysis, independent variable was regressed on the mediator variable. Sobel tests were used for confirmation of model tests. Four of those five analyses were to test the mediational role of devoted time to gambling between gambling severity and gambling motives excluding socialization motive since it was not correlated with gambling severity according to the findings of the present study. The fifth analysis was to test the mediational role of devoted time to gambling between gambling severity and gambling-related cognitions.

According to the results of the first mediational analyses time devoted to gambling mediated the relationship between excitement motive and gambling severity as shown in Table 29. Sobel test confirmed the mediational model ($z = 4.79 > 1.96$, $p < .05$). Fifty percent of the excitement motive gambling severity path was accounted for by the time measure as partial mediator.

Table 29. *Regression equations testing mediating effect of time devoted to gambling between excitement motive and gambling severity*

| | *β* | *t* (w/in) | *df* | *F*change | $R^2$ |
|---|---|---|---|---|---|
| **Regression 1** (DV: gambling severity) | | | | | |
| Step 1: | | | 1. 348 | 21.94** | .06 |
| Excitement motive | .24 | 4.68** | 348 | | |
| Step 2: | | | 1, 347 | 51.37** | .18 |
| Excitement motive | .12 | 2.34* | 347 | | |
| Time | .37 | 7.14** | 347 | | |
| **Regression 2** (DV: time) | | | | | |
| Step 1: | | | 1, 348 | 42.41** | .11 |
| Excitement motive | .33 | 6.51** | 348 | | |
| Sobel test: 4.79, $p < .05$, 50% | | | | | |

** $p < .001$, * $p < .05$

According to the results of the second mediational analyses time devoted to gambling mediated the relationship between amusement motive and gambling severity as shown in Table 30. Sobel test confirmed the mediational model ($z = 4.97 > 1.96$, $p < .05$). Fifty-nine percent of the amusement motive gambling severity path was accounted for by the time measure as full mediator.

Table 30. *Regression equations testing mediating effect of time devoted to gambling between amusement motive and gambling severity*

| | *β* | *t* (w/in) | *df* | *F*change | $R^2$ |
|---|---|---|---|---|---|
| **Regression 1** (DV: gambling severity) | | | | | |
| Step 1: | | | 1. 348 | 17.92** | .05 |
| Amusement motive | .22 | 4.23** | 348 | | |
| Step 2: | | | 1, 347 | 52.73** | .17 |
| Amusement motive | .09 | 1.76 | 347 | | |
| Time | .38 | 7.62** | 347 | | |
| **Regression 2** (DV: time) | | | | | |
| Step 1: | | | 1, 348 | 46.73** | .12 |
| Amusement motive | .34 | 6.84** | 348 | | |
| Sobel test: 4.97, $p < .05$, 59% | | | | | |

** $p < .001$, * $p < .05$

According to the results of the third mediational analyses time devoted to gambling mediated the relationship between monetary motive and gambling severity as shown in Table 31. Sobel test confirmed the mediational model ($z = 3.23 > 1.96$, $p < .05$). Twenty percent of the monetary motive gambling severity path was accounted for by the time measure as partial mediator.

Table 31. *Regression equations testing mediating effect of time devoted to gambling between monetary motive and gambling severity*

| | *β* | *t* (w/in) | *df* | *F*change | $R^2$ |
|---|---|---|---|---|---|
| **Regression 1** (DV: gambling severity) | | | | | |
| Step 1: | | | 1. 348 | 46.35** | .12 |
| Monetary motive | .34 | 6.81** | 348 | | |
| Step 2: | | | 1, 347 | 59.19** | .24 |
| Monetary motive | .28 | 5.79** | 347 | | |
| Time | .36 | 7.49** | 347 | | |
| **Regression 2** (DV: time) | | | | | |
| Step 1: | | | 1, 348 | 12.65** | .04 |
| Monetary motive | .19 | 3.56** | 348 | | |
| Sobel test: 3.23, $p < .05$, 20% | | | | | |

** $p < .001$, * $p < .05$

According to the results of the fourth mediational analyses time devoted to gambling mediated the relationship between avoidance motive and gambling severity as shown in Table 32. Sobel test confirmed the mediational model ($z = 2.71 > 1.96$, $p < .05$). Fourteen percent of the avoidance motive gambling severity path was accounted for by the time measure as partial mediator.

According to the results of the final mediational analyses time devoted to gambling mediated the relationship between gambling-related cognitions and gambling severity a shown in Table 33. Sobel test confirmed the mediational model ($z = 4.47 > 1.96$, $p < .05$). Twenty-seven percent of the gambling-related cognitions gambling severity path was accounted for by the time measure as partial mediator.

Table 32. *Regression equations testing mediating effect of time devoted to gambling between avoidance motive and gambling severity*

| | *β* | *t* (w/in) | *df* | *F*change | $R^2$ |
|---|---|---|---|---|---|
| **Regression 1** (DV: gambling severity) | | | | | |
| Step 1: | | | 1. 348 | 63.23** | .15 |
| Avoidance motive | .39 | 7.95** | 348 | | |
| Step 2: | | | 1, 347 | 60.02** | .28 |
| Avoidance motive | .34 | 7.32** | 347 | | |
| Time | .36 | 7.75** | 347 | | |
| **Regression 2** (DV: time) | | | | | |
| Step 1: | | | 1, 348 | 8.21* | .02 |
| Avoidance motive | .15 | 2.87* | 348 | | |
| Sobel test: 2.71, $p < .05$, 14% | | | | | |

** $p < .001$, * $p < .05$

Table 33. *Regression equations testing mediating effect of time devoted to gambling between gambling-related cognitions and gambling severity*

| | *β* | *t* (w/in) | *df* | *F*change | $R^2$ |
|---|---|---|---|---|---|
| **Regression 1** (DV: gambling severity) | | | | | |
| Step 1: | | | 1. 348 | 55.41** | .14 |
| Gam.-related cognitions | .37 | 7.42** | 348 | | |
| Step 2: | | | 1, 347 | 43.40** | .23 |
| Gam.-related cognitions | .27 | 5.45** | 347 | | |
| Time | .33 | 6.59** | 347 | | |
| **Regression 2** (DV: time) | | | | | |
| Step 1: | | | 1, 348 | 36.57** | .10 |
| Gam.-related cognitions | .31 | 6.05** | 348 | | |
| Sobel test: 4.47 , $p < .05$, 27% | | | | | |

** $p < .001$, * $p < .05$

### 3.9.2 Variables Associated with Gambling Severity

In the hierarchical multiple regression analyses to determine if addition of various gambling-related variables into the equation would improve prediction of gambling severity above and beyond the previously entered variables, variables were entered into the equation via six steps. As shown in Table 34 lie scale of EPQR-A was entered in the equation in the first step as a control variable. Personality variables of neuroticism and extraversion as the second step of the equation preceded affect variables of positive affect and negative affect. In the fourth step, gambling related cognitions was entered into the equation. In the final steps of the equation; gambling investment measured by computing the percentage of household income and amount of gambling expenditure ratio, devoted time to gambling, frequency of gambling, number of gamble types, and duration of past gambling behavior as gambling involvement step followed gambling motives step namely; avoidance, amusement, monetary, socialization, and excitement motives.

According to the results of the analysis, when all variables were in the equation, after step 6, the $R^2$ value of .42 (adjusted $R^2$ = .39) indicated that more than one third of the variability in gambling severity was explained by some of the variables entered into the equation. Lie as a control variable was negatively associated with gambling severity ($\beta$ = -.17, t(352) = -3.20, $p < .05$) explaining 3% of the gambling severity variance ($F$ change(1, 352) = 10.22, $p < .05$). From variables of the second step of the equation neuroticism was positively associated with gambling severity ($\beta$ = .24, t(350) = 4.62, $p < .001$). This step significantly

incremented in $R^2$ explaining additional 7% of variance ($F$ change (2, 350) = 13.04, $p$ < .001). Third step additionally explained 2% of the total variance ($F$ change (2, 348) = 3.55, $p$ < .05). Negative affect was positively associated with gambling severity ($\beta$ = .15, $t$(348) = 2.46, $p$ < .05) in this step.

Table 34. *Variables associated with gambling severity*

| Predictors in set | $F$ change for set | $t$ for w/in set predictors | $df$ | Beta ($\beta$) | Model $R^2$ change |
|---|---|---|---|---|---|
| Dependent variable: gambling severity | | | | | |
| I. *Control variable* | 10.22* | | 1, 352 | | .028 |
| Lie | | -3.20* | 352 | -.17 | |
| II. *Personality* | 13.04** | | 2, 350 | | .067 |
| Neuroticism | | 4.62** | 350 | .24 | |
| Extraversion | | -1.21 | 350 | -.06 | |
| III. *Affect* | 3.55** | | 2. 348 | | .018 |
| Positive affect | | -1.28 | 348 | -.07 | |
| Negative affect | | 2.46* | 348 | .15 | |
| IV. *Cognition* | 44.24** | | 1, 347 | | .100 |
| Gambling related cognitions | | 6.65** | 347 | .33 | |
| V. *Motivation* | 5.18** | | 5, 342 | | .055 |
| Avoidance | | 3.95** | 342 | .25 | |
| Amusement | | -0.72 | 342 | -.06 | |
| Monetary | | 1.55 | 342 | .09 | |
| Socialization | | -1.29 | 342 | -.07 | |
| Excitement | | 1.80 | 342 | .13 | |
| VI. *Gambling involvement* | 17.02** | | 5, 337 | | .147 |
| Gambling investment | | 5.09** | 337 | .27 | |
| Devoted time to gambling | | 3.40* | 337 | .19 | |
| Frequency of gambling | | -0.31 | 337 | -.02 | |
| Number of gamble types | | 1.31 | 337 | .06 | |
| Duration of gambling | | 0.03 | 337 | .03 | |

** $p$ < .001, * $p$ < .05

Gambling-related cognitions that was entered in the fourth step of the equation was also positively associated with gambling severity ($\beta$ = .33, $t$(347) = 6.65, p < .001) improving the explained variance 10% ($F$ change (1, 347) = 44.24, $p$ < .001). Only avoidance motive was significantly associated with gambling severity ($\beta$ = .25, $t$(342) = 3.95, $p$ < .001) among the gambling motives. The contribution of this step to the explained variance of gambling severity was 6% ($F$ change (5, 342) = 5.18, $p$ < .001). Finally gambling investment ($\beta$ = .27, $t$(337) = 5.09, $p$ < .001) and time spent for gambling ($\beta$ = .19, $t$(337) = 3.40, $p$ < .01) variables were found to be positively associated with gambling severity. This final step improved the explained variance 15% ($F$ change (5, 337) = 17.02, $p$ < .001). In addition to gambling investment and devoted time to gambling, lie ($\beta$ = -.12, $t$(337) = -2.58, $p$ < .05) and positive affect (β = -.11, t (337) = -2.34, p < .05) were found to be negatively associated with gambling severity whereas gambling-related cognitions ($\beta$ = .14, $t$(337) = 2.56, p < .05) and avoidance motive ($\beta$ = .21, $t$(337) = 3.68, $p$ < .001) were found to be positively associated with gambling severity in this final step when all variables were in the equation.

Moreover three logistic regression analyses were carried out to determine the associates of risky gambling as shown in Table 35 by 3 models. Risky gambling group was determined by gambling severity mean score (3.50). Risky gamblers were the participants who got score 4 or above on SOGS as compared to the rest of the participants who got below score 4 on SOGS. The first model contained two independent variables of gambling involvement (gambling investment, devoted time to gambling-related affairs); the second model contained 8 independent variables of

gambling-related cognitions and gambling motives (avoidance, amusement, monetary, socialization, excitement) together with gambling involvement; and the third model contained 12 independent variables of affect (negative affect, positive affect) and personality (neuroticism, extraversion) together with previous gambling involvement, gambling-related cognitions, and gambling motives variables. Gambling investment was measured in terms of percent of gambling expenditure in terms of household income and the participants who reported that they spent up to 5% of their household income in gambling were coded as 0 and the rest of them as 1 whereas the participants who reported that they spent up to 5 hours per week for gambling-related affairs were coded as 0 and the rest of them as 1. The rest of the independent variables were also coded categorically as low in the measure = 0 and high in the measure = 1 computed through median split.

The first model was statistically significant [$\chi^2(2, 348) = 48.68$, $p < .001$], indicating that the model was able to distinguish risky gambling group membership. The participants who spent more than 5% of their household income for gambling were more than 3 times and the participants who devoted more than 5 hours a week for gambling were 2.74 times more likely to be in risky gambling group. The second model was also statistically significant [$\chi^2(8, 348) = 81.32$, $p < .001$]. The strongest predictors of risky gambling were gambling involvement and devoted time to gambling with odds ratios of 2.72 and 2.36 respectively as measures of gambling involvement. The other significant predictors of risky gambling were gambling-related cognitions and avoidance motive with odds ratios of 2.27 and 1.89 respectively in the second model.

Table 35. *Logistic regression predicting risky gambling (SOGS<4 & SOGS≥4)*

| | *B* | Wald | *df* | *p* | Odds Ratio | 95% C. I. for Odds Ratio | |
|---|---|---|---|---|---|---|---|
| **Model I** | | | | | | Lower | Upper |
| Gambling involvement | | | | | | | |
| Gambling investment | 1.15 | 16.58 | 1 | .000 | 3.15 | 1.81 | 5.47 |
| Devoted time to gambling | 1.01 | 18.19 | 1 | .000 | 2.74 | 1.72 | 4.35 |
| | $\chi^2(2, 348)=48.68, p < .001$ | | | | Nagelkerke $R^2 = .18$ | | |
| **Model II** | | | | | | | |
| Gambling involvement | | | | | | | |
| Gambling investment | 1.01 | 11.42 | 1 | .001 | 2.72 | 1.52 | 4.87 |
| Devoted time to gambling | 0.86 | 11.44 | 1 | .001 | 2.36 | 1.44 | 3.88 |
| Cognitions & Motives | | | | | | | |
| Gambling-related cognitions | 0.82 | 9.29 | 1 | .002 | 2.27 | 1.34 | 3.84 |
| Avoidance motive | 0.64 | 5.88 | 1 | .015 | 1.89 | 1.13 | 3.16 |
| Amusement motive | 0.24 | 0.56 | 1 | .453 | 1.28 | 0.68 | 2.41 |
| Monetary motive | 0.21 | 0.63 | 1 | .429 | 1.23 | 0.73 | 2.08 |
| Socialization motive | -0.19 | 0.51 | 1 | .475 | 0.82 | 0.47 | 1.42 |
| Excitement motive | 0.26 | 0.79 | 1 | .372 | 1.29 | 0.73 | 2.31 |
| | $\chi^2(8, 348)=81.32, p < .001$ | | | | Nagelkerke $R^2 = .28$ | | |
| **Model III** | | | | | | | |
| Gambling involvement | | | | | | | |
| Gambling investment | 1.08 | 12.78 | 1 | .000 | 2.97 | 1.64 | 5.39 |
| Devoted time to gambling | 0.94 | 12.94 | 1 | .000 | 2.56 | 1.53 | 4.27 |
| Cognitions & Motives | | | | | | | |
| Gambling-related cognitions | 0.72 | 6.93 | 1 | .009 | 2.05 | 1.20 | 3.51 |
| Avoidance motive | 0.52 | 3.70 | 1 | .054 | 1.69 | 0.99 | 2.87 |
| Amusement motive | 0.33 | 0.99 | 1 | .317 | 1.39 | 0.73 | 2.66 |
| Monetary motive | 0.07 | 0.07 | 1 | .792 | 1.08 | 0.63 | 1.84 |
| Socialization motive | -0.21 | 0.55 | 1 | .460 | 0.81 | 0.46 | 1.42 |
| Excitement motive | 0.34 | 1.26 | 1 | .262 | 1.41 | 0.78 | 2.55 |
| Affect & Personality | | | | | | | |
| Negative affect | 0.73 | 6.41 | 1 | .011 | 2.07 | 1.18 | 3.64 |
| Positive affect | -0.23 | 0.72 | 1 | .396 | 0.79 | 0.47 | 1.35 |
| Neuroticism | 0.06 | 0.04 | 1 | .843 | 1.06 | 0.60 | 1.87 |
| Extraversion | -0.04 | 0.02 | 1 | .889 | 0.96 | 0.57 | 1.62 |
| | $\chi^2(12, 348)=90.79, p < .001$ | | | | Nagelkerke $R^2 = .31$ | | |

*Note.* Gambling investment: Percentage of household income spent on gambling coding up to 5% = 0 more than 5% = 1, Devoted time to gambling: up to 5 hours per week = 0 more than 5 hours per week = 1. Rest of the variables were also coded as low in the measure = 0 and high in the measure = 1 through median split.

The third model was also statistically significant [$\chi^2(12, 348) = 90.79$, $p < .001$], indicating that the model was able to distinguish risky gamblers. The strongest

predictors of risky gambling was again gambling investment and devoted time to gambling with odds ratios of 2.97 and 2.56 respectively. In the third model, cognitions and negative affect was found to be significant predictors of risky gambling with odds ratios of 2.05 and 2.07 respectively. Avoidance motive to gamble that was one of the significant predictors of risky gambling in the second model did not reach significance level with a slight difference ($p$ = .054).

### 3.9.3 Variables Associated with Gambling-Related Harm

In the beginning of the current study, it was hypothesized that higher gambling involvement, avoidance motive, neuroticism, and negative affect of the participants would be associated with higher gambling-related harm scores. Gambling-related harm was evaluated by means of family and friendship relations, job life, economic concerns, and emotional well-being of the participants as introduced in the method chapter of this thesis. A hierarchical multiple regression analysis was performed to determine if addition of various variables into the equation would improve prediction of gambling-harm above and beyond the previously entered variables. Variables were entered into the equation via six steps. As shown in Table 36, the lie subscale of EPQR-A was entered in the equation in the first step as a control variable. Personality variables of neuroticism and extraversion as the second step of the equation preceded affect variables of positive affect and negative affect. In the fourth step, gambling related cognitions was entered into the equation. In the final steps of the equation; gambling investment measured by computing the

percentage of household income and amount of wagering in gambling ratio, devoted time to gambling, frequency of gambling, number of gamble types, and duration of gambling activity as gambling involvement step followed gambling motives step namely; avoidance, amusement, monetary, socialization, and excitement.

Table 36. *Variables associated with gambling-related harm*

| Predictors in set | *F* change for set | *t* for w/in set predictors | *df* | Beta ($\beta$) | Model $R^2$ change |
|---|---|---|---|---|---|
| Dependent variable: gambling-related harm | | | | | |
| I. *Control variable* | 0.75 | | 1,352 | | .002 |
| Lie | | -0.87 | 352 | -.05 | |
| II. *Personality* | 19.27** | | 2, 350 | | .099 |
| Neuroticism | | 5.66** | 350 | .30 | |
| Extraversion | | -1.39 | 350 | -.07 | |
| III. *Affect* | 6.71* | | 2, 348 | | .033 |
| Positive affect | | -1.73 | 348 | -.09 | |
| Negative affect | | 3.40* | 348 | .20 | |
| IV. *Cognition* | 5.62* | | 1, 347 | | .014 |
| Gambling related cognitions | | 2.37* | 347 | .12 | |
| V. *Motivation* | 4.94** | | 5, 342 | | .057 |
| Avoidance | | 4.65** | 342 | .30 | |
| Amusement | | -1.57 | 342 | -.13 | |
| Monetary | | 0.47 | 342 | .03 | |
| Socialization | | -1.02 | 342 | -.06 | |
| Excitement | | 0.88 | 342 | .07 | |
| VI. *Gambling involvement* | 12.45** | | 5, 337 | | .124 |
| Gambling investment | | 5.73** | 337 | .33 | |
| Devoted time to gambling | | 0.28 | 337 | .02 | |
| Frequency of gambling | | 1.56 | 337 | .09 | |
| Number of gamble types | | -1.34 | 337 | -.06 | |
| Duration of gambling | | -0.75 | 337 | -.04 | |

** $p < .001$, * $p < .05$

According to the results of the analysis, when all variables were in the equation, after step 6, the $R^2$ value of .33 (adjusted $R^2$ = .30) indicated that approximately one third of the variability in gambling-related harm was explained by some of the variables entered into the equation. Lie as a control variable was not significantly associated with gambling-related harm. From variables of the second step of the equation, neuroticism was positively associated with gambling-related harm ($\beta$ = .30, $t(350) = 5.66$, $p < .001$). This step significantly incremented in $R^2$ explaining 10% of variance ($F$ change (2, 350) = 19.27, $p < .001$). Third step additionally explained 3% of the total variance ($F$ change (2, 348) = 6.71, $p < .05$). Negative affect was positively associated with gambling-related harm ($\beta$ = .20, $t(348) = 3.40$, $p < .05$). Gambling related cognitions that was entered in the fourth step of the equation was also positively associated with gambling-relate harm ($\beta$ = .12, $t(347) = 2.37$, $p < .05$) improving the explained variance 1% ($F$ change (1, 347) = 5.62, $p < .05$). Only avoidance motive was significantly associated with gambling-related harm ($\beta$ = .30, $t(342) = 4.65$, $p < .001$) among the other gambling motives. The contribution of this step to the explained variance of gambling severity was 6% ($F$ change (5, 342) = 4.94, $p < .001$). Finally gambling investment ($\beta$ = .33, $t(337)$ = 5.73, $p < .001$) was found to be positively associated with gambling severity. This final step improved the explained variance 12% ($F$ change (5, 337) = 12.45, $p <$ .001). In addition to the gambling investment variable, avoidance motive was found to be positively associated with gambling-related harm ($\beta$ = .27, $t(337) = 4.48$, $p <$ .001) whereas amusement motive was found to be negatively associated with

gambling-related harm ($\beta$ = -.16, $t$(337) = -2.03, $p$ < .05) in this final step when all the variables were in the equation.

A second hierarchical multiple regression analysis was performed to determine if addition of various variables into the equation would improve prediction of gambling harm above and beyond gambling severity. In the first step gambling severity measured by SOGS was entered into the equation followed by EPQR-A scales of neuroticism, extraversion, and lie. Positive and negative affect scales of PANAS were entered into the equation as third set of variables. In the final step, motives as measured by GMS were entered into the equation. Statistics for the related regression equations are shown in Table 37. According to the results of the analysis, when all variables were in the equation, the $R^2$ value of .36 (adjusted $R^2$ = .33) indicated that approximately one third of the variability in gambling-related harm was explained by some of the variables entered into the equation. Gambling severity as a control variable was associated with gambling-related harm ($\beta$ = .53, $t$(352) = 11.76, $p$ < .001) explaining almost three quarters of the gambling-related harm variance alone ($F$ change (1, 352) = 138.20, $p$ < .001). From variables of the second step of the equation, neuroticism was positively associated with gambling-related harm ($\beta$ = .18, $t$(349) = 3.77, $p$ < .05) and incremented in $R^2$ explaining additional 4% of variance ($F$ change (3, 349) = 5.92, $p$ < .001). Third step additionally explained 1% of the total variance ($F$ change (2, 347) = 3.63, $p$ < .05). Negative affect was positively associated with harm ($\beta$ = .13, $t$(347) = 2.51, $p$ < .05) in this step. Finally, only avoidance motive was significantly associated with gambling-related harm ($\beta$ = .19, $t$(342) = 3.19, $p$ < .05) among the gambling motives

in the fourth step. The contribution of this step to the explained variance of gambling harm was 2% ($F$ change (5, 342) = 2.54, $p < .05$).

Table 37. *Variables associated with gambling-related harm*

| Predictors in set | $F$ change for set | $t$ for w/in set predictors | $df$ | Beta ($\beta$) | Model $R^2$ change |
|---|---|---|---|---|---|
| Dependent variable: gambling-related harm | | | | | |
| I. *Control variable* | 138.20** | | 1, 352 | | .282 |
| Gambling severity | | 11.76** | 352 | .53 | |
| II. *Personality* | 5.92* | | 3, 349 | | .035 |
| Lie | | 1.48 | 349 | .07 | |
| Neuroticism | | 3.77** | 349 | .18 | |
| Extraversion | | -0.91 | 349 | -.04 | |
| III. *Affect* | 3.63* | | 2, 347 | | .014 |
| Positive affect | | -1.27 | 347 | -.06 | |
| Negative affect | | 2.51* | 347 | .13 | |
| IV. *Motivation* | 2.54* | | 5, 342 | | .024 |
| Avoidance | | 3.19* | 342 | .19 | |
| Amusement | | -1.43 | 342 | -.11 | |
| Monetary | | -0.28 | 342 | -.01 | |
| Socialization | | -0.52 | 342 | -.03 | |
| Excitement | | 0.08 | 342 | .01 | |

** $p < .001$, * $p < .05$

### 3.9.4 Negative Affect Regulation Model Testing

Path analysis was carried out to test the model in which it was hypothesized that personality and affect dimensions of the participants would predict gambling-related motives and in turn, those motives would predict gambling severity. Specifically, it was assumed that neuroticism would predict avoidance motive to

gamble whereas negative affect would predict both monetary and avoidance motives to gamble. Moreover it was hypothesized that the mentioned motives would predict gambling severity in turn as measured by SOGS.

The model was tested using the LISREL 8.80 (STUDENT EDITION) computer program. The input to LISREL was in the form of covariance matrix produced by SPSS as shown Table 38. Data fit indices such as $\chi^2$, ratio of $\chi^2$ to degree of freedom (df), Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), Adjusted of Goodness of Fit Index (AGFI), and Non-Normed Fit Index (NNFI) were assessed in the analysis of data fit. Values between 1 and 5 for $\chi^2$ df ratio, 0.0 and 0.08 for RMSEA, and values higher than 0.90 for GFI, AGFI, and NNFI were evaluated as acceptable criteria.

Table 38. *Covariance matrix among the study variables*

| Variables | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. neuroticism | 3.211 | | | | |
| 2. negative affect | 0.675 | 0.489 | | | |
| 4. avoidance motive | 0.663 | 0.267 | 0.694 | | |
| 4. monetary motive | 0.363 | 0.156 | .322 | 1.060 | |
| 5. gambling severity | 1.494 | 0.536 | 0.976 | 1.048 | 8.942 |

Since the participants' gambling motives were thought to be closely dependent on each other, they were assumed as interdependent and their errors were correlated through the analyses. In other words the errors between avoidance and monetary motives to gamble were freely correlated. Based on the data, $\chi^2(3, N = 354) = 8.93$, $p < .05$ is found to be statistically significant; however the ratio of 8.93 to 3

was 2.98 in the range of expected conventional ratio of 5:1. On the other hand, RMSEA = .075; GFI = .99; AGFI = .95; and NNFI = .96 values indicated a good fit. No modification was suggested according to the indices. As shown in Figure 5, the results revealed that neuroticism personality dimension predicted avoidance motive ($\beta$ = .25, $t$ = 4.78, $p$ < .05) and negative affect predicted both avoidance ($\beta$ = .33, $t$ = 6.05, $p$ < .05) and monetary ($\beta$ = .22, $t$ = 4.15, $p$ < .05) motives to gamble. In turn, both avoidance ($\beta$ = .31, $t$ = 5.96, $p$ < .05) and monetary ($\beta$ = .23, $t$ = 4.39, $p$ < .05) motives predicted gambling severity scores of the participants. The variance explained on gambling severity was 19% in the model with direct effects of avoidance and monetary motives to gamble. The indirect effect of neuroticism on gambling severity via avoidance motive was .08 ($t$ = 3.73, $p$ < .05). On the other hand, the indirect effect of negative affect on gambling severity via avoidance and monetary motives was .15 ($t$ = 5.31, $p$ < .05).

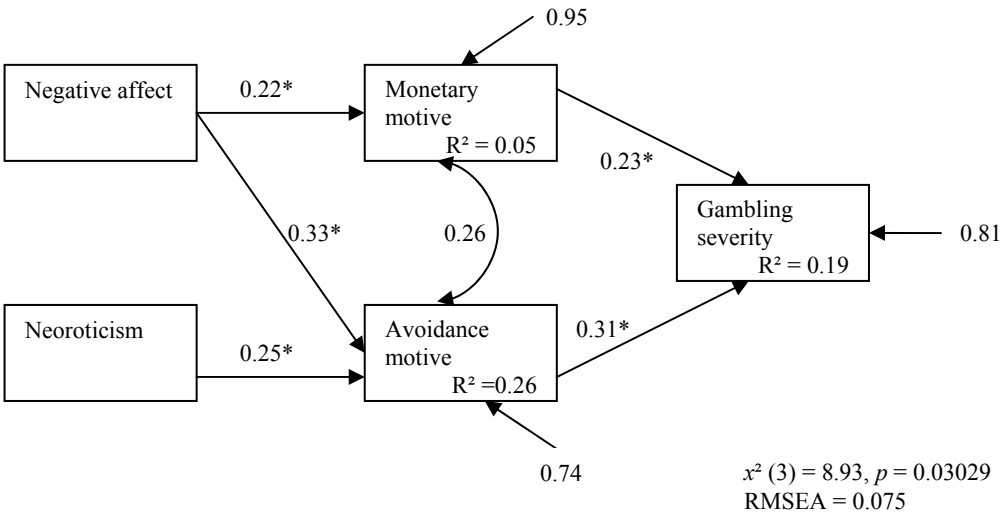


Figure 5. *Model for the role of gambling motives between gambling severity and negative affect and neuroticism*

# CHAPTER 4

# DISCUSSION

## 4.1 Overview

The present study aimed to evaluate the associates of gambling severity and gambling-related harm for Turkish gambling individuals. For this aim; gambling-related cognitions and motives, personality, affect, stages of change, and gambling participation measured by indices of gambling expenditure, time devoted to gambling-related affairs, frequency of gambling, duration of past gambling behavior of the individuals were examined in relation to their gambling severity and gambling-related harm scores. The Gambling-Related Cognitions Scale (GRCS; Raylu & Oei, 2004b) and the Five-Factors Gambling Motives Scale (GMS; Lee, Chae, Lee, & Kim, 2007) were also adapted into Turkish and their initial psychometric properties were explored as part of the current study. In this section, the main findings of the present study examined according to the research questions of the current study (pp. 80-82) are presented and discussed. In the final part of this chapter; general overview of the present findings, strengths, limitations, and clinical implications of the current study, and directions for future research are discussed.

## 4.2 Psychometric Properties of the Turkish Versions of GRCS and GMS

One of the purposes of the current study was to adapt the GRCS (Raylu & Oei, 2004b) and the GMS (Lee, Chae, Lee, & Kim, 2007) into Turkish. This purpose of the study was based on two major considerations. The first of those considerations was to test the influence of both gambling related cognitions and gambling related motives on problem gambling in a Turkish sample composed of individuals who were regular gamblers. The second consideration was above and beyond the investigation of the major research questions of the present study. As discussed in more detail in the introduction chapter, lack of interest in the gambling realm among Turkish researchers was one of the most critical inspirer of the present study. Thus, the second consideration was related with the expectation that an increase in the number of reliable and valid measurement instruments that are culturally appropriate to the Turkish gambling individuals could facilitate gambling related research in Turkey. Overall, the adaptation of the mentioned scales met the first consideration of the present study. However, time is required to observe the possible contributions of the adapted scales on gambling research in the long run in Turkey.

Factually, there is no consensus in the gambling literature about what should constitute the entire content of gambling-related cognitions and gambling-related motives. Thus, differently labeled constructs with varying content for those cognitions and motives with respect to gambling are developed, assessed and used in various studies up to day. For instance ‘as denial of the independence of trials’ of the Informational Biases Scale (Jefferson & Nicki, 2003); ‘winning expectancy’ or

'illusory control' of the Gambling Beliefs Questionnaire (Joukhador, Maccallum, & Blaszcznski, 2003); 'predictive control', or 'inability to stop' of the GRCS (Raylu & Oei, 2004b); 'coping' or 'enhancement' of the Gambling Motives Questionnaire (Stewart & 2008); 'excitement' or 'avoidance' of the GMS (Lee et al., 2007) are some examples of those cognitions and motives. It was not an easy decision to adapt GRCS (Raylu & Oei, 2004b) and GMS (Lee et al., 2007) since the list was a long and a complicated one. However, relatively larger sample sizes and more heterogeneous gambling activities of the participants in the reported psychometric properties of GRCS and GMS made them appear more suitable for adapting into Turkish as compared to the other scales. Moreover, face validity of the scales, taking into consideration the Turkish cultural characteristics and the comprehensibility of the items of the scales were evaluated as advantageous. Finally, the studies of the original versions of the scales were carried out with non-clinical samples and since the present study was planned to be conducted with participants who were not seeking treatment, this was considered as another advantage of deciding to adapt GRCS and GMS into Turkish.

The factor structures of GRCS and GMS were examined as an initial exploration step of the psychometric properties of the scales following translation, back-translation, and data collection procedures of the adaptation process. According to the results of the principal component analyses, especially the items of the Turkish version of GRCS loaded on various factors within a different fashion as compared to the original factor structure of the scale. This created confusion in both labeling and interpretation of the factors. On the other hand, the factor structure of the Turkish

version of GMS was found to be more similar to the factor structure of the original scale. The major difference of the Turkish version of GMS as compared to the original version was the diffusion of items on amusement motive and excitement motive in a dissimilar fashion. The factor structures of the other motives to gamble (monetary, socialization, and avoidance motives) were quite similar to each other when the adapted and the original versions of the scale were compared with respect to their item loadings.

The item 24 ('Friends insisted gambling') of GMS which loaded under socialization motive in the original scale, loaded under excitement motive in the Turkish version according to the results of the principal component analyses. This item had the lowest communality value and the lowest loading score as compared to the other items of the scale. Moreover, the item-total correlation score for the whole scale items was lowest for the item 24. Overall, the mentioned item loaded on an unexpected factor with respect to its content and it had relatively low communality value, loading and item-total correlation scores. The gambling behavior of the sample of the present study does not necessitate the presence of someone else to initiate and carry out the gambling activity due to the naturalistic properties of betting behavior. The presence of someone else to initiate and carry out the gambling activity is a requisite for other gambling types such as playing cards. Betting on sports or horse races is suitable to gamble individually. From this perspective, although unsuitability of the item was evaluated in connection with the different sample composition of the present study as compared to the sample composition of the original version of GMS (Lee et al., 2007) rather than being the deficiency of the

item, item 24 was deleted for the rest of the analyses for both theoretical and practical reasons.

In the next step of the exploration of the psychometric properties of the GRCS and the GMS, Cronbach's alpha values according to the original factor structures of the scales and item total correlation ranges were examined for the reliability assessment. Reliability coefficients found for factors of GRCS were lower as compared to the coefficients of the original version of the scale (Raylu & Oei, 2004b) and the Chinese version of the scale (Oei, Lin, & Raylu, 2007). However, the Cronbach's alpha value for the entire scale was satisfactory and compatible with the Cronbach's alpha scores reported for the entire GRCS in the literature (e.g., Emond & Marmurek, 2010; Raylu & Oei, 2004b; Oei, Lin, & Raylu, 2007). Low internal consistency scores found for the subscales and high internal consistency score found for the whole GRCS in the present study was one of the reasons to carry out the rest of the analyses based on the whole score of the scale. In addition, the suggestions of the developers of the original scale about using the total scale score rather than subscale scores to predict severity of gambling (Raylu & Oei, 2004b; Oei, Lin, & Raylu, 2007) was the second reason to use the whole score of the scale. On the other hand, moderate to high reliability coefficients were found for factors of GMS. Although items of GMS loaded in a slightly different fashion (especially items of 'amusement' and 'excitement' motives) in the present study as compared to the original version of the scale according to the results of the principal component analyses, it was decided to preserve the original factor structure of the scale and carry out the rest of the analyses accordingly.

In the third step of the exploration of the psychometric properties of GRCS and GMS, validity of the scales were tested. For criterion validity of the scales, extreme groups on higher and lower gambling severity scores measured by SOGS were formed and group comparisons between high and low gambling severity scores were contrasted for the GRCS and the GMS factor scores. As expected, the participants who reported more gambling cognitions and more motivation to gamble reported higher gambling severity. The exception was gambling for socialization motive. However, this finding of the present study with respect to the socialization motive was not surprising since the association of socialization motive with gambling severity is reported as relatively weaker as compared to the other motives (e.g., Lee et al., 2007; Lee, Lee, Bernhardth, & Yoon, 2006; Stewart & Zack, 2008).

For the concurrent validity of the GRCS and the GMS; associations of the scales were tested with the indices of affect, personality, gambling severity, and gambling participation. Unfortunately, there are no gold standards established to examine the concurrent validity of gambling related cognitions and motives in the literature. Moreover, a similar instrument to measure gambling cognitions was not present at the time of the present study in Turkish to compare with the Turkish version of GRCS. That is why the measures to check the concurrent validity of GRCS and GMS were selected based on the reported correlations of those measures with problem gambling in the literature. The associations of problem gambling with neuroticism (e.g., Bagby et al., 2007; Blaszczynski, Buhrich, & McConaghy, 1985; Kaare, Mottus, & Konstabel, 2009), negative affect (e.g., Slutske et al., 2005; Vachon & Baggby, 2009), and gambling participation (e.g., el-Guebaly et al., 2006;

Faregh & Leth-Steenson, 2011; Matthews, Farnsworth, & Griffiths, 2009) are reported across various studies in the gambling literature. From this standpoint, positive correlations of gambling-related cognitions with neuroticism, negative affect, gambling severity, and devoted time to gambling according to the results of the present study were accepted as the empirical support of the concurrent validity of the Turkish version of GRCS.

On the other hand, all gambling motives measured by GMS were found to be associated with devoted time to gambling used as an index of gambling participation measure and all of the motives were positively associated with gambling severity except socialization motive. Overall, as gambling motives increased gambling participation and gambling severity also increased. Avoidance motive to gamble was found to be positively correlated with negative affect and neuroticism as expected, based on the established associations between addictive behaviors and neuroticism and/or negative affect (e.g., Cheetman, Allen, Yücel, & Lubman, 2010; Stewart, Brown, Devoulyte, Theakston, & Larsen, 2006; Stewart, Loughlin, & Rhyno, 2001). Monetary motive to gamble was also found to be positively correlated with neuroticism and negative affect as hypothesized in the beginning of the present study. It was hypothesized that expected 'more money' could mean as a fake cure for the solution of the problems of the especially emotionally vulnerable gamblers.

Overall, the findings about the internal consistency values of the scales, group comparisons based on the gambling severity scores of the participants, and corrrelational analyses with relevant measures demonstrated that the Turkish versions of GRCS and GMS were psychometrically reliable and valid. The principal

component analyses revealed different factor structures for the scales, thus it was decided to use the original factor structures of GMS and GRCS in the current study for several reasons. First of all, the participants of the present study were a rather homogenous group with respect to the gambling types. The sample composed of individuals who regularly bet on sports and horse-races which is different when compared to the samples of the original scales composed of more heterogeneous participants with respect to the gambling types. The proposal of a different factor structure for the scales might be a premature inference because of the mentioned sample make-up. In relation, as far as it is known, this is the first attempt to adapt GMS in a different culture and second attempt to adapt GRCS following the Chinese version of the scale (Oei, Lin, & Raylu, 2007). Thus, sufficient empirical support for different factor structures of the scales is not yet available. Thirdly, the consideration of cross-cultural contribution in the literature necessitates utilization of analogous measurement tools for communication purposes. Fourthly, in spite of the items' diffusion across factors of the scales in a different fashion in the current study as compared to the original scales, internal reliability coefficients of the subscales of GMS and internal reliability coefficients of the whole scales of GMS and GRCS yielded compatible results when compared to the original scales' internal reliability coefficients. Finally, and maybe most importantly, this study aimed to adapt and examine initial psychometric properties of GMS and GRCS in the Turkish culture in order to evaluate the interrelationships of gambling motives and cognitions with relevant variables. From this standpoint, this study was not purely psychometric. Because of the above reasons, the original factor structures of the scales were not

modified for the analyses in the rest of the present study. However, future research both in Turkey with different types of gamblers and in different cultures with GRCS and GMS will obviously improve the implications of the present study's findings with respect to the factor structures of GMS and GRCS.

In addition to the adaptation of GRCS and GMS into Turkish, gambling-related harm questions were also designed to assess the negative consequences of gambling in the present study. The importance of the gambling-related harm has started to be discussed only recently in the gambling literature (e.g., Adams, Raeburn, & De Silva, 2009; Blaszczynski, 2009; Currie et al., 2006; Rodgers, Caldwell, & Butterworth, 2009). However, there is not a standardized instrument to measure the construct of gambling related harm. For instance, Currie and colleagues (2006) utilized Canadian Problem Gambling Index using gambling severity questions inquiring about 'gambling tolerance' or 'being criticized by others' to measure negative consequences of gambling. In the present study, harm was assessed through direct questions about effects of gambling on family and friendship relations, job life, economical concerns, and emotional well-being rather than the indirect indices of gambling severity measures. The internal consistency score of the five questions developed to assess gambling-related harm were high. Moreover, the mentioned index of gambling-related harm, developed for the present study, was found to be positively correlated with negative affect, gambling severity, and two measures of gambling participation (devoted time to gambling and gambling intensity measured by gambling expenditure with respect to household income). Those positive correlations were accepted as supporting the concurrent validity of the developed

questions to assess the gambling-related harm reported by the participants of the current study.

### 4.3 The Relationships of Demographic Variables, Cigarette Smoking, and Alcohol Drinking with Problem Gambling

In the beginning of the current study, it was hypothesized that gambling severity scores and gambling involvement measures would be higher for the single, lower-educated, and younger participants. Thus, reports of the participants were contrasted on gambling severity scores and gambling participation indices values with respect to their demographic characteristics. In their well known and recent critical literature review, Johansson and colleagues (2009) concluded that younger age (than 29 years) was a significant/well-established demographic risk factor for pathological gambling. On the other hand, they stated that conclusions were not possible yet with respect to pathological gambling's associations with single marital status and lower educational level due to the contradictory findings for the former and due to the lack of sufficient empirical findings for the latter. With the above conclusions in mind, the lack of significant differences with respect to the gambling severity scores between married and unmarried participants and between undereducated and educated participants according to the results of the present study were not surprising. Although the participants of the current study did not report different gambling severity scores with respect to their educational level, the participants who had less than high school education reported more gambling-related

harm and gambling expenditure in terms of household income as compared to the individuals who were university students or graduates. It can be speculated that more monetary involvement of the relatively under-educated participants of the current study in gambling might have resulted in more negative consequences of gambling for them as compared to the relatively educated participants of the current study who were relatively less involved in gambling in terms of gambling expenditure. Moreover single participants of the current study reported more monetary involvement in gambling in terms of their personal income controlling for the effect of age as compared to the married participants of the current study suggesting single participants' less monetary responsibility for others (such as wife and/or children). Overall, although lower educational level of the participants was not a risk factor of gambling severity according to the results of the current study, it was a risk factor for more gambling expenditure measured in terms of household income and probably dependent gambling-related harm at one hand. On the other hand, although single marital status was not a risk factor of gambling severity according to the results of the current study, it was a risk factor for more gambling expenditure measured in terms of personal income.

The results of the current study did not yield significant group differences across age groups on gambling severity. However, the participants who were under age 27 reported less time devoted to gambling and lower gambling expenditure in terms of their household income as compared to the elder participants. There are plenty of research findings in the gambling literature suggesting younger age as an important risk factor for problem gambling (e.g., Bondolfi et al., 2008; Gerstein et

al., 1999; Scherrer et al., 2007) as opposed to more limited research findings that do not support that association (e.g., el-Guebaly et al., 2006; Chou & Afifi, 2011). It is important to note that although a significant interaction effect of age and education level was not found on gambling severity, the number of undereducated participants (less than high school) among the young age group (under age 27) was only 8 in 116 (6.9%) in the sample of the present study. Thus, relatively small number of undereducated young participants (obviously relatively large number of educated young participants at the same time) involved in the present study might have impaired the proper representation of the young age group with respect to their gambling severity. From this standpoint, concluding that younger age is not a risk factor for gambling severity and elder age is a risk factor for gambling severity with respect to the gambling participation in the Turkish sample will be a deficient inference. Furthermore, considering the lack of another study conducted with Turkish gamblers to compare the findings of the present study, it will be premature to take this finding as reflecting the situation in Turkey. In addition to the unproportional distribution of educational levels of the participants in the young age group, one more possible but at the same time speculative explanation for this finding may be to propose that the more problem gamblers prefer to use officially licensed internet channels to bet on sports and horse-races rather than going to the betting terminals. Reasons such as disapproval of gambling in the society, convenience of access, concealing aims of identity from the significant others may lead to the preference of internet to gamble. If younger people prefer to use internet to gamble more frequently as compared to adults due to their more acquaintance with

the cybertechnology, young problem gamblers might also have been underrepresented in the present study for this reason.

Another analysis was conducted to compare the gambling severity and gambling participation measures of the participants who were cigarette smokers versus non-smokers and who drank alcohol versus who did not drink alcohol. In the beginning of the current study, it was hypothesized that the participants who were smoking cigarette, drinking alcohol and, using substance would have higher gambling severity and gambling participation scores. The proportion of the participants who reported that they were smoking cigarette (66%) and they were drinking alcohol (58%) was rather high. Percent of cigarette smoking and alcohol drinking are declared as 51% and 25% (the rest never drinks at all) respectively among the Turkish males who were aged over 18 years according to the 2006 official data of the Turkish Statistical Institute (Retrieved January 15, 2012, from http://www.tuik.gov.tr/Kitap.do?metod=KitapDetay&KT_ID). The information with respect to frequency, amount or severity of smoking or drinking of the participants was not questioned in the current study due to the large test battery taking into consideration the time that would be required to complete the whole research instruments. The assessment with respect to alcohol drinking and cigarette smoking of the participants was limited to a single question for each inquiring if the participant was drinking alcohol and smoking cigarette. Similar comparison was not conducted for substance abuse since the participants who reported that they were using substance was limited to only 12 individuals among the total 354 participants of the current study.

The cigarette smokers of the present study reported more gambling severity and more gambling participation as compared to the non-smokers. They scored statistically higher on all gambling participation indices including average time devoted to gambling, frequency of gambling and amount of money spent for gambling both in terms of personal and household income. Thus, these findings of the present study supported the association between smoking and gambling severity reported in the literature across various research results (e.g., McGrath & Barrett, 2009; Petry & Oncken, 2002; Petry, Stinson, & Grant, 2005; Rodda, Brown, & Phillips, 2004).

On the other hand, the participants who reported that they were drinking were not different from the participants who reported that they were not drinking on gambling severity scores and gambling participation measures except for average amount of gambling expenditure. However, drinking participants' gambling expenditure was not significantly more than non-drinking participants when gambling expenditure was computed in terms of personal and household income. Factually, alcohol is one of the probable pathological gambling risk factors (Johansson et al., 2009). For instance, alcohol dependence (e.g., Kruedelbach et al., 2006), alcohol abuse (e.g., Bondolfi et al., 2001), or harmful alcohol use (e.g., el-Guebaly et al., 2006) were found to be associated with gambling severity. Several explanations are possible for the finding of the present study that did not reveal a significant association between gambling severity and alcohol use. The first explanation is easy and shortcut; that is gambling severity and alcohol use is not related for Turkish gamblers who bet on sports and horse races. In connection, it may

be speculated that drinking and gambling association may be related to the setting and/or type of the gambling activity as a second explanation. For instance casinos are gambling settings where free alcohol is available. Voldberg and colleagues (2006) reported significantly higher preference for alcohol consumption around the time participants gambled among card and casino table gambles in the California sample. This possibility raises the necessity of further exploration of the association between alcohol and specific gambling activity and/or environment. The third explanation considers the uncovered heterogeneity of the alcohol drinking participants of the present study; that is within group differences in the alcohol drinking group such as frequency, amount, and severity of drinking alcohol could reveal the hypothesized association between gambling severity and alcohol use. In other words, dimensional analysis from an alcohol use severity perspective rather than a categorical analysis disregarding alcohol use severity could have resulted in the lacking of alcohol and gambling severity relation in the current study. Future research taking into consideration the frequency and amount of drinking alcohol is required to examine the association of drinking and gambling in the Turkish sample to reach at more reliable conclusions.

### 4.4 The Relationship Stages of Change with Gambling Severity & Participation

One of the research questions of the present study aimed to explore if the stages of change of the participants would be associated with their gambling severity scores and gambling participation. The interest of the researchers in the stages of

change with respect to gambling has been very limited up to day. Petry (2005b), Gomez-Pena and colleagues (2011) are the only researchers reporting research findings with respect to the stages of change for gambling behavior as far as it is known by the researcher of the current study. However, the change stage of the gambler may have important implications for various dimensions such as his or her gambling severity, gambling-related harm, treatment motivation, proper treatment selection or treatment outcome. For instance the view which states that the identification of the individuals with low internal treatment motivation and/or low commitment to treatment may be beneficial to assign those individuals in motivational interventions to minimize the risks of poor treatment outcomes is discussed for alcohol dependent/abusing individuals (Staines, Magura, Rosenblum, Fong, Kosanke et al., 2003). Similar potential benefits must be considered for pathological gambling. For instance reports of high drop out rates for pathological gamblers (e.g., Melville, Casey, & Kavanagh, 2007) may be handled more successfully with change stage information of the gambling individuals.

The research in the gambling literature with respect to stages of change were conducted with treatment-seeking/taking pathological gamblers and stages of change were assessed by reliable and valid standard instrument of University of Rhode Island Change Assessment (URICA) Scale (Petry, 2005b; Gomez-Pena et al., 2011). In comparison, the sample of the current study was not composed of treatment-seeking/taking pathological gamblers and three stages of change of the participants with respect their gambling behavior were assessed by a single statement for each stage of change namely; pre-contemplation, contemplation, and preparation. The

participants of the contemplation and the preparation stages were treated as a single group of "contemplators" sharing common features in the current study as compared to the pre-contemplators who stated that they did not contemplate about changing their gambling behavior. This contributed to a more balanced sample distribution of the groups for comparative purpose when relatively larger number of pre-contemplators was considered as compared to the rest of the sample.

In spite of these sample make-up and assessment method differences, the mentioned research findings of Petry (2005b) and Gomez-Pena and colleagues (2011) are still accepted as critical references to compare the findings of the current study. The lower gambling severity reports of the pre-contemplators as compared to the contemplators according to the results of the present study supports the findings of Petry (2005b) and Gomez-Pena and colleagues (2011). This finding seems to show that contemplating over the negative outcomes of gambling becomes more likely when gambling severity increases. For instance the percent of pre-contemplators among relatively low-risk gamblers (SOGS<3) decreased from 77% to 54% when their percent were computed among probable pathological gamblers (SOGS>7). Higher level of gambling-related harm reported by contemplators as compared to the pre-contemplators according to the results of the present study also supports the above argument. In connection, less frequent gambling of the contemplators together with less money wagered and less time devoted for gambling as compared to the pre-contemplators was another finding of the current study. This finding suggests that as the gambling severity and dependently gambling-related harm increase, gambling participation of at least some individuals decrease. In other

words, some gambling individuals may be requiring to encounter with more negative consequences of gambling to attenuate their gambling participation. The emphasis here on 'some' gambling individuals is purposeful since the proportion of pre-contemplators as compared to the contemplators were rather high even among the probable pathological gamblers (pre-contemplators = 54%; contemplators = 46%). Exploring the reasons of not thinking about changing gambling participation pattern for some individuals who encounter with serious gambling-related problems must also be considered in the future studies. Part of the reason may be hidden in the gambling-related attitudes of the gambling individuals. In the current study 89 participants (59%) stated that betting on horse-races was a chance game as compared to the 62 participants (41%) who stated that betting on horse-races was a gamble among the participants who reported that they gambled more frequently on horse races. On the other hand, 126 participants (72%) stated that betting on sports was a chance game as compared to the 49 participants (28%) who stated that betting on sports was a gamble among the participants who reported that they gambled more frequently on sports. Thus, belief in the effect of chance for gambling outcomes may be maintaining factor of gambling behaviors for some individuals.

## 4.5 Comparing the Effects of Gambling Motives on Gambling Severity and Harm

In the beginning of the current study it was expected that gambling for avoidance motive would be more associated with gambling severity and harm as

compared to gambling for excitement, amusement, monetary, and socialization motives since avoidance differs from other gambling motives for several reasons. First of all, negative reinforcement that is avoiding negative experiences, cognitions, or affect through gambling activity is the mechanism of avoidance motive whereas positive reinforcement that is enhancing positive mood or attaining social or financial rewards through gambling activity is the mechanism of the other motives assessed in the current study. Secondly, either explicit or implicit indications of more disruptive effects of coping/avoidance motive as compared to other motives to gamble on the lives of the gambling individuals are already evident in the literature (e.g., Gupta & Derevensky, 1998; Stewart et al., 2008; Wood & Griffiths, 2007) as discussed in detail in the introduction chapter. From this standpoint, the avoidance motive to gamble was compared to amusement, excitement, socialization, and monetary motives to gamble across gambling severity and gambling-related harm scores of the participants through various statistical analyses in the current study. The major aim of those comparisons was to show the relatively more negative effect of gambling for avoidance motive as compared to the other motives in terms of gambling related severity and harm.

The findings of the present study partially confirmed the expectations with respect to more adverse effects of avoidance motive outlined above. Variance analyses revealed that the gambling severity scores of the participants measured by SOGS who were high on the avoidance motive and low on the other motive (amusement, excitement, or monetary) were higher than the participants who were high on the other motive and lower on the avoidance motive, although the

differences were not statistically significant. The findings did not change according to the results of the ANCOVA when the wagered money in gambling with respect to the household income as a gambling participation index was used as a covariate variable. On the other hand, gambling-related harm scores of the participants who were high on the avoidance motive and low on the other motive (amusement, excitement, or monetary) were significantly higher as compared to the participants who were high on the other motive and lower on the avoidance motive, after controlling for the effect of gambling severity scores of the participants. The comparison of socialization motive with avoidance motive was not part of these analyses since none of the participants of the present study had high socialization motive scores and low avoidance motive scores to gamble.

Supportive and determinative results with respect to the negative effects of avoidance motive were also obtained according to the results of the several hierarchical multiple regression analyses conducted in the current study. Only avoidance motive among the other motives was found to be significantly associated with both gambling severity and gambling-related harm after controlling for the effects of personality, affect, and gambling-related cognitions. Gambling for avoidance motive predicted gambling severity and gambling-related harm above and beyond neuroticism, negative affect, and gambling-related cognitions of the participants. Social desirability in the responses of the participants were also controlled by lie subscale of EPQR-A in those analyses. Avoidance motive was still a significant predictor of gambling-related harm and gambling severity separately after controlling for the effect of gambling severity for the former and the effect of

gambling participation indices of time devoted to gambling-related affairs and gambling expenditure in terms of the household income for the latter.

The results of the present study outlined above and their indications are important for several reasons. Relatively more adverse consequences of avoidance motive on both gambling severity and gambling-related harm in comparison to other motives assessed in the present study is obvious and robust. Avoidance motive predicted gambling severity and harm above and beyond well established associates of gambling such as gambling participation, neuroticism, negative affect, and gambling-related cognitions. These findings suggest that the individuals who gamble especially to avoid their negative experiences (the motive for the initiation of gambling may be something else in the beginning) have to confront in turn with newly added negative experiences in their lives. Probably more severe gambling, more related harm, more avoidance aspiration forming the vicious cycle of the gambler in the pathonegenesis process seems to act as an important maintenance mechanism of pathological gambling. Although cross-sectional nature of the present study limits the discussion of causal relationships, the findings support a strong relationship between avoidance motive and gambling severity / gambling-related harm. These findings have implications for both psychotherapy and preventive programs with respect to the problem gambling. For instance improving coping abilities of the gamblers so that they can handle their problems more efficiently instead of avoiding them through destructive means of gambling may be a target for both treatment of pathological gamblers or prevention of the negative prognosis of the vulnerable individuals' gambling participation.

The above findings also indirectly imply that although negative consequences of gambling termed as gambling-related harm in the present study are closely related to and dependent on gambling severity, they are not necessarily equivalent constructs. For instance, higher avoidance motive scores of the participants predicted more gambling-related harm as compared to other higher motives scores of the participants even though the effect of gambling severity was controlled. This finding suggests that subjective report of the harm caused by gambling is not necessarily the same for individuals who are equally severe gamblers (e.g., who have same symptoms of pathological gambling as defined by DSM). If this is the case, two more issues deserve attention. First, more standardized instruments to measure gambling-related harm needs to be developed in order to assess the negative consequences of gambling more properly and to compare harm differences across individuals, gambling participation measures, gambling types, and cultures. For instance it is possible that a person who has relatively more pathological gambling symptoms may report less harm as compared to another person who has relatively less pathological gambling symptoms but reporting more harm. These differences require consideration. Second, this assessment domain of gambling may be part of pathological gambling criterion of DSM and/or classification of gamblers in relevant research. A person may not report sufficient number of criterion to meet the diagnosis of pathological gambling but report necessary and sufficient negative consequences of gambling that deserves attention at one hand and requires treatment on the other hand.

### 4.6 Psychological Associates of Gambling Severity & Harm

Both gambling-related cognitions and motives measured by the newly adapted Turkish versions of GRCS and GMS were found to be associates of gambling severity and gambling-related harm as hypothesized in the beginning of the current study. Gambling cognitions of the probable pathological gamblers together with avoidance, monetary, and excitement motive scores were higher as compared to the non-pathological gamblers. Although amusement and socialization motive scores of the probable pathological gamblers were also higher as compared to the non-pathological gamblers, the difference was not statistically significant. The participants who had relatively more gambling cognitions and higher avoidance, monetary, amusement, and excitement scores also scored higher on gambling participation measures. Moreover gambling cognitions were found to be significant associates of gambling severity and gambling-related harm after controlling for the effects of personality and affect whereas avoidance motive was found to be significant associate of gambling severity after controlling for the effects of personality, affect, and gambling cognitions. Both cognitions and avoidance motive were significant predictors of gambling severity above and beyond neuroticism and negative affect according to the results of hierarchical regression analyses. Moreover again both cognitions and avoidance motive predicted risky gambling group membership of the participants of the current study according to the results of the logistic regression analysis when analyzed with gambling participation indices of devoted time to gamble and gambling expenditure in terms of household income at

the same time. The participants who had relatively more gambling cognitions and higher avoidance motive were 2.3 and 1.9 times more likely to be risky gamblers respectively as compared to the participants who had relatively less gambling cognitions and lower avoidance motive. Overall, the above findings are in accordance with the previous findings supportting the relation of gambling severity with gambling cognitions (e.g., Delfabbro, Lambos, King, & Puglies, 2009; Jefferson & Nicki, 2003; Joukhador, Maccallum, & Blaszczynski, 2003; Moodie, 2008; Oei, Lin & Raylu, 2007) and avoidance motive (e.g., Gupta & Derevensky, 1998; Nower, Derevensky, & Gupta, 2004; Wiebe, Cox, & Falkowski-Ham; 2003b; Wood & Griffiths, 2007). The importance of the findings of the current study is that the relations of gambling severity with increased gambling cognitions and avoidance motive was still significant when the effects of various gambling-related variables such as gambling participation, negative affect, and neuroticism were controlled. Thus, both gambling cognitions and avoidance motive seem to be important maintaining factors of problem gambling participation. As a result, questioning relevant gambling cognitions' utility and validity together with enhancing coping skills of those individuals in order not to avoid their problems through the ineffective means of gambling must be essential components of treatment of problem gambling individuals.

Besides the discussed predictors of gambling including motives and cognitions; also affect and personality dimensions were hypothesized and tested as associates of gambling severity in the current study. Especially negative affect was found as a strong associate of gambling severity as hypothesized in the beginning of

the current study. It was found that negative affect was higher among the probable pathological gamblers as compared to the non-pathological gamblers. Moreover, negative affect was significantly associated with gambling severity and gambling-related harm after controlling for the effects of personality according to the results of multiple hierarchical regression analyses. The effect of negative affect on gambling-related harm was still significant when the effect of gambling severity scores measured by SOGS were controlled together with personality and lie scores of the participants. On the other hand, negative affect was found to be one of the significant associates of risky gambling according to the results of the logistic regression analysis when assessed together with gambling participation measures, personality, gambling motives and cognitions. The participants who had relatively high negative affect scores were approximately two times more likely to be risky gamblers as compared to the participants who had low negative affect scores. These findings are in agreement with previous research findings suggesting a relation of gambling severity either with direct measures of negative affect (Matthews et al., 2009) or indirect indices of negative affect such as depression (e.g., Voldberg et al., 2006, Wiebe et al., 2003b) or negative emotionality (Slutske, Caspi, Moffitt, & Poulton, 2005). The peculiarity of the findings of the present study is the significant association of negative affect and gambling severity / harm after controlling for the effects of other robust predictors of problem gambling. Obviously these relations that are correlational in essence do not prove necessarily causal relations. Gambling to avoid present negative affect or negative affect bound to adverse consequences of gambling are both possibilities as discussed in detail in the introduction chapter of

the current study. Thus, longitudinal studies are needed to explore the causal pathways of negative affect and gambling severity / harm.

On the other hand positive affect was found to be higher among non-pathological gamblers as compared to the probable pathological gamblers according to the results of the present study. Positive affect was also found to be negatively correlated with gambling-related harm analyzed as part of the concurrent validity of gambling-related harm questions. Moreover it was one of the significant predictors of the gambling severity scores of the participants according to the results of the regression analyses when assessed with personality, gambling cognitions and motives, negative affect, and gambling participation indices. This negative association of positive affect with gambling severity and harm found in the current study may be attributed to positive affect's buffering influence on the losses of the gambling individuals. Higher positive affect for some gambling individuals might be leading to a more optimistic view of their problems including gambling-related ones. It is equally possible that gambling individuals with high positive affect may have more social support to compensate negative outcomes of gambling-related problems as compared to the gambling individuals with low positive affect. To extend this speculative list is possible however it is equally important to note that this finding of the present study needs to be confirmed in the future research to understand whether low positive affect is another risk factor for gambling-related problems in general. For instance, Matthews and colleagues (2009) also utilizing PANAS to assess negative and positive affect as in the current study did not report a significant relation between gambling severity and positive affect according to the results of the

regression analysis. It is important to note that their sample composition was different from the sample composition of the present study. Their sample composed of university students who were gambling on the internet. Moreover, they did not compare probable pathological gamblers with non-pathological gamblers. Thus, at least it is possible to attribute the above inconsistency with respect to the findings of the current study and findings of Matthews and colleagues (2009) about the relationship of positive affect and gambling severity to the different sample compositions of the studies and different analysis methods.

Neuroticism was also found to be another strong associate of problem gambling according to the results of the present study in the Turkish sample as hypothesized. Neuroticism scores of probable pathological gamblers were higher as compared to the non-pathological gamblers. Neuroticism scores of the participants were also found to be associated with both gambling severity and gambling-related harm scores of the participants. This finding suggested that neuroticism dimension of personality is a vulnerability factor for problem gambling also in the Turkish sample of gambling individuals. As detailed in the introduction chapter, association of neuroticism and gambling severity is well established in the gambling literature across various research conducted with different samples and measured by various instruments (e.g., Blaszczynski, Buhrich, & McConaghy, 1985; Kaare, Mottus, & Konstabel, 2009). Overall the association of neuroticism and gambling severity seems to show that some individuals are vulnerable for gambling-related problems due to their personality features. Gambling may be serving as an ineffective means of emotional problems solving for neurotic individuals.

### 4.7 Role of Gambling Participation in Prediction of Gambling Severity

In the beginning of the current study, it was hypothesized that higher gambling involvement of the participants would be associated with their higher gambling severity and gambling-related harm scores since one of the essential components of gambling problems is obviously gambling participation. Although how frequently individuals gamble, how much money they wager in gambling, or how much time they devote to gambling-related affairs are not official part of pathological gambling criterion specified by DSM, these indices are inevitable ingredients of gambling-related problems. Association of gambling participation and gambling severity is researched and established in many studies (e.g., Currie et al., 2009; el-Guebaly et al., 2006; Matthews et al., 2009). According to the results of the current study, indices of gambling participation were found higher for probable pathological gamblers as compared to the non-pathological gamblers as expected. Probable pathological gamblers reported that they devoted more time to gambling-related affairs, they gambled more frequently and they wagered more money in gambling both in terms of personal and household income. They also reported more number of gambling types and longer past gambling behavior as compared to non-pathological gamblers, but the differences were not statistically significant. Moreover, indices of gambling participation were found as strongest associates of gambling severity and gambling-related harm analyzed through hierarchical multiple regression analyses. According to the results of the logistic regression analyses, the participants who wagered more than 5% of their household income and who spent

more than 5 hours per week for gambling were found to be approximately 3 and 2.5 times more likely to gamble in a risky fashion respectively as compared to the participants who wagered less than 5% of their household income and who spent less than 5 hours per week for gambling. These findings were important to show the strong association between gambling participation and gambling severity in the Turkish sample in accordance with the relevant findings discussed in detail in the introduction chapter.

However, comprehensive models to propose and to test gambling participation's interaction with relevant other variables on predicting gambling severity are not common in the literature. Part of the problem is probably lack of confidence in the validity of the gambling participation measures as Rodgers, Caldwell, and Butterworth (2009) suggested. For instance, Voldberg and colleagues (2006) discussed the possible impact of social acceptability of gambling types on reports of gambling spending. Additionally, the effects of gambling participation are not independent of the factors such as life conditions or financial standing of the gambling individuals (Petry, 2009). Keeping in mind the complexity of measuring gambling participation and realizing the necessity to assess the results cautiously, it was hypothesized that gambling participation would mediate the relationship between gambling-related cognitions / gambling motives and gambling severity according to the results of the current study. Socialization motive was excluded from the analyses since it was not significantly correlated with gambling severity scores of the participants. Time devoted to gambling was utilized as gambling participation index for the analyses for several reasons. Time was found to be highly correlated

with gambling severity measured by SOGS (higher than frequency of gambling). Moreover, it was hypothesized that it would be relatively less influenced by personal or household income of the participants as compared to the index of gambling expenditure.

Sobel tests confirmed the mediational models as hypothesized in the beginning of the current study. Gambling motives / cognitions and gambling severity paths were accounted for by the time index of gambling participation. In other words, more gambling related cognitions and gambling for higher levels of avoidance, amusement, excitement and monetary motives predicted more gambling participation that in turn resulted in more severe gambling. These results are at least important to present supportive statistical evidence that the relations of relatively abstract constructs of motives and cognitions to gambling severity are actualized by means of relatively more concrete indicators of gambling participation. Confirmation of the above findings by future research with different indices to evaluate gambling participation and with different instruments to measure gambling cognitions and motives may have important implications. For instance, subjective reports of change in erroneous cognitions with respect to gambling through the psychotherapy process of pathological / problem gamblers may be checked by gambling participation measures in the individual level at one hand. Similarly subjective reports of change in gambling motives may be checked by gambling participation measures. On the other hand, benefits of the legislative limitations within the gambling accounts of the individuals with respect to their gambling frequency or gambling spending may be evaluated as part of 'responsible gambling' applications in the long run within the

framework of preventive programs on legislations against problem gambling in the governmental level.

### 4.8 Negative Affect Regulation Model of Gambling

A negative affect regulation model of gambling was hypothesized and tested as part of the current study. It was hypothesized that personality and affect dimensions of the participants would predict gambling-related motives and in turn those motives would predict gambling severity as measured by SOGS. The results of the path analyses conducted by Structural Equation Modeling showed that neuroticism predicted gambling for avoidance motive whereas negative affect predicted both monetary and avoidance motives, and in turn, monetary and avoidance motives predicted gambling severity as expected in the beginning of the current study. Factually, negative affect regulation model of gambling tested in the current study was based on the relevant research findings of alcohol literature. Association of coping motives, neuroticism, and drinking problems were presented across various studies in the alcohol literature (e.g., Stewart, Loughlin, & Rhyno's, 2001; Theakston et al., 2004). In addition, the necessity of inclusion of negative affect in those models was also stated to examine the relative contributions of personality domains and affect (Stewart & Devine, 2000). As far as it is known by the researcher of the present study, no results testing personality, affect, motivation, and gambling severity variables in a single model was reported in the gambling literature before. Thus, the model that was tested and that revealed quite acceptable

fit indices in the current study is important to suggest a comprehensive model at least statistically executing that emotionally vulnerable individuals (high neuroticism and high negative affect) encounter with gambling problems while trying to avoid their problems. The model tested in the current study also contained the monetary motive to be predicted by negative affect and to predict gambling severity. Gaining money was reported as one of the most important valid reasons to gamble for the Turkish people according to the results of the very few studies conducted in Turkey (Duvarcı & Varan, 2000; GID, 2009). Solution to financial problems through possible gambling wins was hypothesized to also mean solution to emotional problems that could be assumed to be resulting from economical difficulties for some gambling individuals. Although monetary motive was not found to be significantly correlated with positive affect, it was found to be significantly correlated with negative affect according to the results of the present study.

Overall, the suggested negative affect regulation model revealed statistically acceptable results according to the findings of present study. Although probably not including all the gambling individuals, some of the problem gamblers may be trying to regulate their negative affect by gambling. It is also plausible that an attempt for regulation of negative affect might be especially important in the beginning of the gambling process before the gambling behavior of the individuals become conditioned. It seems necessary to assess the affect regulation expectancies of the gambling individuals from gambling who seek treatment for gambling-related problems and to support those individuals for both coping with their emotional vulnerability and improving their problem solving skills. However, further research

is required to examine the mechanisms of those associations and obviously the priority must be to confirm the findings of those associations in future research with different samples and with different assessment instruments.

### 4.9 General Overview of the Present Findings

Lack of interest in the gambling research in Turkey was assumed to be related to the lack of standardized measurement instruments in Turkish assessing various dimensions of gambling behaviors. From this standpoint, one of the aims of the present study was to adapt and examine the initial psychometric properties of GRCS (Raylu & Oei, 2004b) and GMS (Lee, Chae, Lee, & Kim, 2007). The relevant analyses revealed that the Turkish versions of GRCS and GMS were reliable and valid instruments for male individuals who were over age 18 and who betted on horse races and sports. For GMS, the original factor structure of the scale was preserved in spite of minor differences found in the current study with respect to the item loadings according to the results of the factor analysis as compared to the original scale. The internal reliability scores of the scales computed considering the original factor structure of GMS was rather satisfactory. For GRCS, item loadings were found to be rather different as compared to the original factor structure of the scale according to the results of the factor analysis. A different factor structure of GRCS was not proposed according to the findings of the present study due to the sample limitations and the whole scale score with high reliability was used instead. The internal reliability score for the whole scale was compatible with that of the

original scale. Overall, both scales showed promising results with respect to their reliability and validity analyses. However, it is important to note that test-retest reliability analyses were not conducted for the scales, because it was not possible to come across with the same betting individuals in the second time. Thus, this is a limitation of the current study which needs to be explored in future studies.

Examining the gambling severity scores of the participants showed the necessity of conducting gambling-related research in the Turkish sample and offering therapeutic support together with developing preventive programs. Approximately one third (33.1%) of the participants scored 5 or above (cut-off score to identify probable pathological gamblers according to the original version of the scale; Lesieur & Blume, 1987) and more than one tenth (11.6%) of the participants scored 8 or above (cut-off score to identify probable pathological gamblers according to the Turkish version of the scale; Duvarcı & Varan, 2001) on SOGS. Although the sample was not a representative one, the finding that showed that at least one individual among ten who betted on the terminals among Turkish participants of the current study could be classified as probable pathological gambler deserves attention. Even the participants with relatively lower gambling severity scores (below 3 on SOGS) reported difficulties resulting from their gambling behaviors such as controlling their gambling behavior (‘*gambled more than intended to’*), interpersonal problems (*‘people criticized your gambling’*), and intrapersonal problems (*‘felt guilty about gambling’*). Although cautious evaluation of the findings of the present study is required due to the convenience nature of the sample at one hand, the necessity to conduct further research with Turkish gambling individuals, using more

representative samples considering the findings of the present study seems to be obvious.

The results of the present study did not suggest differences on gambling severity scores of the participants depending on their demographics including marital status, age, and education level. However, lower education and single marital status seemed to be risks factors for higher gambling expenditure in terms of household income and personal income respectively. This finding of the current study suggested that targeting especially some individual groups in terms of their demographic characteristics for preventive programs against gambling involvement may be plausible. On the other hand, the participants who stated that they were drinking alcohol reported more average gambling spending as compared to the participants who stated that they were not drinking alcohol although gambling severity scores of the groups did not differ significantly. On the other hand, cigarette smokers reported both higher gambling severity and gambling participation (time, expenditure, frequency) as compared to the non-smokers according to the findings of the present study. Overall, the association found between nicotine and problem gambling according to the results of the current study supported the previous findings in the literature (e.g., McGrath & Barrett, 2009; Petry & Oncken, 2002; Petry, Stinson, & Grant, 2005; Rodda, Brown, & Phillips, 2004). The possible explanations for failing to find relations between gambling severity and demographics / drinking alcohol are discussed in the previous relevant section.

In the current study, the gambling participation of the participants were measured by various indices including time devoted to gambling-related affairs,

frequency of gambling, duration of past gambling behavior, total number of gambling types, and gambling expenditure. Gambling expenditure was also computed taking into consideration the personal income and the household income of the participants. Gambling participation of the probable pathological gamblers were found to be higher as compared to the non-pathological gamblers across all indices of gambling participation except number of gambling types and duration of past gambling behavior. This finding of the current study supported the previous findings suggesting an association between problem gambling and various gambling participation measures (e.g., Clarke & Clarkson, 2009; el-Guebaly et al., 2006; Faregh & Leth-Steenson, 2011). Gambling participation indices were also found to be strongest associates of gambling severity and gambling-related harm after controlling for the effects of personality, affect, gambling motives, and gambling-related cognitions according to the results of the hierarchical regression analyses conducted in the current study. Finally, gambling participation measured by the time devoted to gambling-related affairs mediated the association between gambling-related motives / cognitions and gambling severity. Overall, gambling participation measured by various indices in the present study showed to be the strongest associate of gambling severity and gambling-related harm even after controlling for the effects of the variables such as neuroticism personality dimension, negative affect, gambling-related cognitions, and gambling motives according to the results of the current study. These findings of the current study implied the necessity of limiting the gambling participation of the individuals in order to prevent or mitigate gambling-related problems. Both educative programs and legislative arrangements

may be considered in the macro level in addition to the psychotherapeutic efforts in the micro level in order to limit the gambling participation of the individuals.

The effects of gambling-related motives and cognitions on gambling severity and gambling related harm were also tested in the present study. Probable pathological gamblers scored higher on gambling-related cognitions and avoidance, monetary, and excitement motives as compared to the non-pathological gamblers. Gambling-related cognitions and avoidance motive was found to be significantly associated with gambling severity and harm after controlling for the effects of personality and affect of the participants according to the results of the hierarchical regression analyses. Gambling for avoidance motive was found to be significantly associated with reported gambling harm of the participants even after controlling for the effect of gambling severity scores of the participants. Moreover both avoidance motive and gambling cognitions significantly predicted risky gambling group membership according to the results of the logistic regression analysis when controlled for the effect for gambling participation. The participants who had relatively higher avoidance motive scores were 1.9 and the participants who had relatively higher gambling cognitions were 2.3 times more likely to gamble in a risky fashion as compared to the participants with relatively lower avoidance motive scores and lower gambling cognitions when the effects of gambling participation was also accounted for. Overall the results of the present study suggested that gambling cognitions and motives (especially avoidance motive) are related to both gambling severity and dependent negative consequences of gambling even when the effects of associates of problem gambling such as negative affect and neuroticism are

controlled. These findings of the current study implied the necessity of increasing awareness of the gamblers with respect to their distorted gambling-related cognitions through therapeutic efforts at one hand. On the other hand, to support coping skills of the gambling individuals and to psychoeducate them about more secure ways to achieve amusement, excitement, and monetary gains rather than participating more in gambling seems to be necessary content to be focused in the psychotherapy of the treatment seeking gambling individuals.

The association of gambling with affect and personality was also assessed as part of the analyses in the current study. Positive and negative affect was measured by PANAS (Watson, Clark, & Tellegen, 1988) and neuroticism, extraversion, and psychoticism dimensions of personality were measured by EPQR-A (Francis, Brown, & Philipchalk, 1992). Psychoticism subscale of the EPQR-A was excluded from the analyses due its low internal reliability score. Moreover, lie subscale of the EPQR-A was utilized in the relevant analyses to control for the effect of social desirability on the results. It was found that neuroticism and negative affect scores of the probable pathological gamblers were higher as compared to the non-pathological gamblers whereas positive affect scores of the non-pathological gamblers were higher as compared to the probable pathological gamblers. Both negative affect and neuroticism were also found to be significant predictors of both gambling severity and dependent negative consequences of gambling according to the results of the hierarchical regression analyses. Moreover, the participants with relatively higher negative affect scores were found to be 2 times more likely to gamble in a risky fashion as compared to the participants with relatively lower negative affect scores

according to the results of regression analyses when affect was analyzed simultaneously with other significant associates of gambling such as gambling participation and gambling-related cognitions. The above findings supported the previous findings suggesting association between gambling severity and neuroticism (e.g., Bagby et al., 2007; Blaszczynski, Wilson, & McConaghy, 1986) and between gambling severity and negative affect (Matthews, Farnsworth, & Griffiths, 2009). Gambling may be serving as self-medication of emotional problems of the some vulnerable individuas who have relatively higher negative affect and more neurotic personality features. However, that kind medication preference of the emotionally vulnerable individuals seems to be increasing their problems in the long run depending on their gambling behaviors.

In the final part of the analyses, path analysis was carried out to test the model in which it was hypothesized that personality and affect dimensions would predict gambling-related motives and in turn, those motives would predict gambling severity of the participants. Negative affect predicted avoidance and monetary motives, neuroticism predicted avoidance motive and in turn avoidance and monetary motives predicted gambling severity as hypothesized in the beginning of the current study. As far as it is known by the researcher of the present study, no results testing personality, affect, motivation, and gambling severity variables in a single model was reported in the gambling literature before. Thus, negative affect regulation expectancies of the emotionally vulnerable gambling individuals through avoiding their problems and anticipating 'easy and/or big money' was at least statistically supported by the findings of the present study. Support for those

individuals to cope better with their problems and to understand more realistically the probabilistic outcomes of their gambling behaviors with respect to monetary wins and loses seems to be required.

### 4.10 Strengths and Limitations of the Present Study

The findings of the present study provided comprehensive information with respect to the clinical features of Turkish gambling individuals. However, it is important to note that expected contribution of the findings of the present study is not only limited to the Turkish gambling individuals. The evaluation of various gambling-related dimensions including affect, personality, motives, cognitions, gambling participation indices for the same individuals and in the same study is not common in the gambling literature. Thus, simultaneous analyses of these variables for the gambling individuals probably ensured to minimize the effects of confounding variables at one hand. On the other hand, it was possible to compare the relative contribution of those variables on gambling severity and gambling-related harm since those variables were analyzed simultaneously.

Gambling participation of the participants was measured by various indices including frequency of gambling, duration of past gambling behavior, devoted time to gambling, expenditures of gambling computed both in terms of personal and household income. Although a single composite index of gambling participation score was not computed for the participants of the current study, the participants were contrasted on those indices with respect to their gambling severity and

dependent negative consequences of their gambling. Moreover a possible confounding variable of social desirability also reported as limitations in gambling research (Bagby et al., 2007) was controlled in the most analyses of the present research by the Lie scale of the EPQR-A. Since 'lying to family members, therapist, or others to conceal the extent of involvements with gambling' is one of the symptoms of pathological gambling (APA, 1994), the mentioned control for social desirability in the reports of the participants seems as another strength of the current study.

The probable pathological gamblers classified according to the scores of the participants on SOGS (Lesieur & Blume, 1987) in the current study were not individuals who were treatment-seeking as it is the case in some studies (e.g., Ibanez et al., 2001; Steel & Blaszczynski, 1998). This sample composition may be evaluated as a strength of the current study since treatment-seeking gamblers may not necessarily represent the pathological gamblers in general. In other words, the pathological gamblers who seek and who do not seek treatment may have different features. For instance, Voldberg and colleagues (2006) reported that only 6% of the problem and pathological gamblers acknowledged having sought professional help for a gambling problem according to the results of their study. Availability of services, stigma, cost, uncertainty about the effectiveness of the treatment are some reported barriers to treatment of gamblers in the related research (Rockloff & Schofield, 2004). A connected strength of the current study with respect to the sample composition was that the non-pathological gamblers who were compared with the pathological gamblers were also gambling individuals. Obviously the

information from the comparison between non-gambling individuals and problem gamblers is valuable; however distinguishing features of problem/pathological gamblers as compared to the non-problem/non-pathological gambling individuals are equally valuable.

In spite of the strengths of the current study outlined above, the present study is not without limitations. Description of these limitations is essential to interpret the findings cautiously at one hand. On the other hand, research with gambling individuals by overcoming some of the presented limitations of the current study may be inspiring for some researchers thereby contributing to future studies. First of all, the design of the present study was cross-sectional and cross-sectional nature of the data brings the necessity of caution in evaluating the results. For instance the assigned classes of the participants (i.e., probable pathological gamblers versus non-pathological gamblers or participants high on avoidance motive versus participants low on avoidance motive) due to the statistical analyses relative to the scores of the other participants of the sample may be transitory rather than being trait-like or permanent features that will remain stable over time. However, longitudinal studies are required both to investigate temporal changes on dimensions such as gambling severity, motives for gambling, frequency of gambling, or gambling-related harm and to examine interrelations of these dimensions. In connection although the proposed models of the present study such as negative affect regulation model or mediational models was theoretically derived and statistically supported by the findings of the present study, it is hard to claim unidirectional relationships with cross-sectional data. It will be more plausible to suggest the presence of reciprocal

and feedback relationships between those variables. For instance gambling participation and gambling severity intensifying negative affect that in turn increases the motivation to gamble may equally be plausible as opposed to the model suggested in the current study as negative affect intensifying gambling motivation and that motivation in turn increases gambling participation and gambling severity.

Secondly, it is not possible to claim that the established associations from the findings of the current study represent either whole Turkish horse race and sports bettors in specific or Turkish gambling individuals in general due to the sampling limitations. There were participants who refused to consent attending the research due to unknown reasons. For instance, the participants who composed the sample of the present study may be different with respect to their personality, affect, gambling participation, or gambling severity as compared to the individuals who refused to participate. On the other hand, gamblers in Turkey are not solely composed of the individuals who only bet at sports and/or horse races betting terminals. Thus, findings of the present study must be confirmed with other sample groups of individuals gambling with other types of games and and at the same time gambling at other places. It is also important to note that these gambling individuals are not only males; however being female was an exclusion criteria for the present study. The limitations related with the convenience nature of the sample outlined above confines the generalizability of the findings of the present study. In addition, the sample of the present study was composed of rather regular gambler since the data was collected in the betting terminals. However, gambling regularly is not the norm for the individuals living in Turkey. For instance, 29% of the participants reported that they

never gambled and 44% of these non-gamblers stated that gambling was not appropriate in their religion according to the results of a study conducted in Turkey with a nationally representative sample (GIB, 2009).

Self-report instruments of the present study must also be mentioned as another limitation of the present study. The data was based on the subjective assessments of the participants. Clinical judgment or confirmation of those self-reports from family members or friends were not implemented. It is possible that some of the items might not have been comprehended by some of the participants. Or the repetition of the word of 'gambling' in most of the items of the scales, or the titles of the scales including the word of 'gambling' might have caused a need to conceal and defensive reports of the participants. Overall, collecting data from multiple sources or measuring physiological and/or behavioral aspects of the variables whenever relevant (i.e., affect in the current study) must be utilized to validate the self-reports of the participants in future research.

Finally, although the newly adapted instruments and developed sets of questions by the researcher (i.e., gambling-related harm questions, stages of change questions) showed preliminary promising findings with respect to their reliability and validity, the analyses were not without shortages. Re-test reliability analyses of the adapted scales were not conducted since it was not possible to contact the same betting individuals in the second time. If the participants of the current study could be paid for their participation, re-test of the scales could have been conducted. Secondly the factor structures of the adapted scales showed some differences as compared to the factor structures of the original scales. Discussing about the

potential cultural effects that could be responsible for those differences was not possible since the sample compositions of the adapted and original versions of the scales were different with respect to the preferred gambling types of the participants. On the other hand, gambling-related harm and stages of change were assessed by limited number of questions and by statements rather than with standardized instruments in the current study. Factually brief and simple means in the assessment of readiness and motivation to change as well as more extensive measurement instruments are advised in the relevant literature (DiClemente, Nidecker, & Bellack, 2008). However still caution is required in the interpretation of those findings since they have little psychometric data available in relation to their validity and reliability. Finally, the lack of frequency and amount of smoking cigarette and drinking alcohol information of the participants may be mentioned as another limitation of the current study. That information could have been utilized to classify smoking and drinking participants according to the intensity of smoking and drinking, thereby enriching the findings.

To sum up, both strengths and limitations are present for the current study. Assessment of various variables including personality, affect, motivation, cognition, gambling participation in relation to gambling severity and gambling related harm for the same individuals provided a rich data to analyze and dependently rich set of findings to discuss on at one hand. On the other hand, cross-sectional nature of the study, convenience sample selection, relying solely on self-reports of the participants, and some shortages of the measurements instruments were some of the limitations.

## 4.11 Clinical Implications

Lack of interest in the gambling field in Turkey was pointed out before as one of the major inspirations of conducting the current study. Adaptation of two scales that measure gambling motives and gambling cognitions of the individuals into Turkish showed promising results with respect to their reliability and validity. Two scales in Turkish and in the gambling field available to the interested researchers are expected to facilitate relevant research with Turkish participants. The reasoning that there seemed to be no reason for Turkish society not to have gambling-related problems taking into consideration the prevalence estimates all over the world concerning problem gambling and the negative economic, social, psychological consequences for gamblers, their families, and society as a whole was the second inspiration also related to the first one in conducting the current study. Otherwise, adapting or developing scales to measure various dimensions related to gambling would be pointless if Turkish individuals did not have gambling-related problems. The findings of the present study indicated that Turkish gamblers had gambling-related problems. Examining the gambling severity scores of the participants showed the necessity of conducting gambling research in Turkey. Although the sample was not a representative one, the finding that suggested that at least each one individual among ten who betted on the terminals among the participants of the current study could be classified as probable pathological gambler was rather critical. Thus, the findings of the present study indicate that conducting research to better understand the etiology of problem gambling in Turkey and developing both prevention and

treatment programs targeting betting individuals are necessary. For instance community awareness raising programs for risks of gambling may be developed within the framework of prevention policies. Helpline centers may be assembled to support both the problem gamblers and their relatives.

As far as it is known by the researcher of the current study, this is the first study to assess various gambling-related measures in a single study. Although the variables assessed in the current study in relation to gambling severity were researched in various studies before; the variables including motives, cognitions, personality, affect, stages of change, gambling participation were evaluated concurrently in the present study. This prosperous set of gambling-related measures assessed in the current study provided advantage of statistically controlling for the effects of different variables on gambling severity and gambling-related harm at one hand. On the other hand, comparative analyses to determine the relative effects of those variables on gambling severity and gambling-related harm became possible.

The above evaluations overall suggested that especially avoidance motive, gambling-related cognitions, neuroticism, negative affect, and gambling participation were relatively robust predictors of gambling severity and gambling-related harm. First of all these findings of the current study imply that one possible pathway of problem gambling is through avoidance efforts of emotionally vulnerable individuals who have relatively higher negative affect and higher neurotic personality features. This pathway indicates empirical support to Blaszczynski and Nower's (2002) emotional vulnerability construct characterized by childhood disturbance and personality, mood disturbance, and poor coping/problem solving skills. The

therapeutic implication of the mentioned indication necessitates supporting especially emotionally vulnerable gamblers in problem solving skills. If those individuals can cope better with their problems they may reduce avoiding their problems by the means of gambling. On the other hand, the preventive implication of the mentioned indication necessitates targeting especially emotionally vulnerable individuals as risky groups for gambling problems.

Second prominent finding of the current study suggested that increased gambling-related cognitions were another relatively robust predictor of gambling severity and gambling-related harm. Moreover, the mediational analysis conducted as part of the current study showed that as gambling-related cognitions increased gambling participation by means of devoted time to gambling had also increased resulting in more gambling-related problems. Thus, restructuring errenous cognitions such as inability to stop gambling behavior, gambling expectancies, or control illusion on gambling outcomes needs to be targeted within the cognitive therapy of the problem gamblers. Factually importance of cognitive distortions as maintaining factors of problem gambling were suggested before (e.g., Raylu & Oei, 2004b; Tavares et al., 2003). In relation addressing cognitive distortions about gambling are suggested as essential part of cognitive therapy in the treatment of pathological gamblers (e.g., Tavares et al., 2003). However, various measures that contain differing content are present in the field to assess gambling cognitions. Uncertainty about the content and factors of scales with respect to gambling cognitions must be clarified in the short run to reach a consensus. This consensus will probably increase the research focus on the cognitions of gambling individuals, support the availability

of comparisons across findings of various studies with respect to gambling cognitions, and provide with more concrete cognitive content to develop and evaluate in the cognitive therapy of problem gamblers.

Gambling participation measured by various indices such as gambling expenditure, devoted time to gambling, or frequency of gambling was the third outstanding associate of gambling severity and gambling related harm according to the findings of the present study. Gambling participation indices were found to be strongest associates of both gambling severity and gambling related harm after controlling for the effects of neuroticism, negative affect, gambling-related cognitions and avoidance motive. Thus, controlling the participation of individuals in gambling seems as the most important step in prevention or mitigation of gambling-related problems. The mediational analyses conducted in the current study testing the mediator role of gambling participation between gambling-related cognitions / motives and gambling severity suggested indirectly the first way in controlling gambling participation of the individuals. Therapeutic efforts to increase awareness of the gamblers with respect to their distorted gambling cognitions may help in controlling the gambling participation of the individuals. Furthermore, increasing better coping skills, like problem focused coping, instead of avoidance and more secure ways to achieve amusement, excitement, and monetary gains rather than participating more in gambling needs to be focused upon in the therapy of the gambling individuals. Obviously the second way in controlling gambling participation of the individuals requires official policies and legislations at the governmental level. Limiting gambling accounts of the individuals with respect to

their income or economical responsibilities, legislative arrangements to govern the means of illegal and dependently uncontrolled gambling may be some of those legal policies. Although discussing on the detailed possible official policies to control gambling participation of the individuals is not within the direct scope of this study and probably is not within the direct scope of the other similar gambling-related studies, association between gambling participation and gambling-related problems must be researched and relevant findings must be strongly emphasized in the reports of those studies to put pressure on legislators to attract their attention and to stimulate their higher involvement for preventive programs.

To sum up, gambling seems to be creating problems for also some of the Turkish individuals, thus research and preventive efforts are required to minimize or at least to stabilize gambling-related problems to some extent in Turkey. Moreover, emotional vulnerability of some individuals characterized by high negative affect and neurotic personality features must be evaluated as a risk factor for gambling problems. Finally, control over gambling participation of the individuals through both legislative policies at macro level and gambling-related cognitions / motives at micro level must be targeted to prevent the increase in gambling-related problems.

### 4.12 Directions for Future Research

The present study provided enriching information with respect to the various associates of problem gambling in spite of its limitations as outlined before. Confirmation of some of those findings and overcoming some of those limitations by

future research will obviously augment the value of the findings of the current study. That is why it is also necessary to discuss the implications of the findings of the present study within the frame of directions for future research.

To start with, although the current study was the first comprehensive research of gambling individuals conducted in Turkey, the findings must be assumed as a prolog rather than being an epilog for Turkish gambling individuals. In this context confirmation of the results of the present study is required with more representative samples since this study was conducted through convenience sampling. Research with nationally representative samples is required to increase the generalizability of the findings of the current study. This kind of research will also provide the opportunity to include the gambling individuals who do not prefer to gamble at the betting terminals at one hand. On the other hand, non-gamblers, gambler or non-gambler females, and gambler or non-gambler individuals under age 18 needs also to be included in the community representative sample. For instance, although the individuals under age 18 were excluded from the current study since it was officially prohibited, 52% of the adolescents between age 15 and 18 are reported to be gambling in Turkey according to the report of GIB (2009). Data from a nationally representative sample utilizing the Turkish versions of GRCS and GMS adapted as part of the current study to measure cognitions and motives of gambling individuals will also provide with more psychometric data with respect to the reliability and validity of those scales.

The implications of the findings of the present study for future research are not limited to individuals gambling in Turkey. First of all, rather than examining

gambling behavior or gambling severity in relation to a single variable such as dimensions of personality or gambling motives, data needs to cover multiple variables related to gambling to be sufficient to test more comprehensive models in future research. The view suggesting that gambling research is still in its infancy is shared by many researchers in the area (e.g. Chiu & Storm, 2010; Milosevic & Ledgerwood, 2010; Raylu & Oei, 2004a). More comprehensive models to test the vulnerability and maintaining factors of problem gambling are required to mature the gambling research. These models may be either inventive or inspired by addiction literature. For instance, negative affect regulation model hypothesized and tested in the current study was adapted from part of Cooper and colleagues' (1995) model of alcohol use as an emotion management strategy with suitable modifications. The comprehensive model utilizing neuroticism personality dimension, negative affect, avoidance and monetary motives at least showed statistically promising results in the prediction of gambling severity. Confirmation, modification, and development of this kind of models also integrating other established associates of gambling such as cognitions or impulsivity in the future research can lead to the better understanding of problem gambling. It is important to note here that longitudinal studies rather than cross-sectional studies are required in future to assess causal relationships in these models.

The second implication of the findings of the present study for future research is the necessity to conduct research with respect to the gambling-related harm. Findings of the current study suggested that although negative consequences of gambling termed as gambling-related harm in the present study are closely related to

and dependent on gambling severity, gambling severity and gambling harm may not be necessarily equivalent constructs. For instance, avoidance motive, negative affect, and neuroticism predicted gambling-related harm above and beyond gambling severity scores of the participants according to the findings of the present study. Standardized instruments to measure negative consequences of gambling must be developed to confirm the above findings in the future research. For instance a person may not report sufficient criterion to meet the diagnosis of pathological gambling but she/he may report sufficient negative consequences of gambling that deserve attention and treatment. Thus, the content of gambling-related harm above and beyond gambling severity must be discussed in the gambling literature in order to develop suitable measurement instruments and to monitor effectively help-seeking gambling individuals.

The interest of the researchers in the stages of change with respect to gambling has been very limited up to day. However, the third implication of the findings of the present study for future research is the necessity to examine the stages of change of the gambling individuals. The findings of the current study suggested that the proportion of the pre-contemplators as compared to the contemplators was rather high even among the probable pathological gamblers; 54% of the probable pathological gamblers were pre-contemplators whereas 46% of them were contemplators with respect to their gambling problems. Exploring the reasons of not thinking about changing gambling participation pattern for some individuals who encounter with gambling-related problems must be considered in the future studies. Ingredients such as erroneous inability to stop beliefs, lack of awareness about the

negative consequences, optimistic bias on expecting to win money, or relatively low responsibility for self and/or others of the gambling individuals may account for the pre-contemplation stage of the individuals who encounter with gambling-related problems. Qualitative analyses conducted with problem gamblers may help in this frame with in-depth data. Determination of those ingredients in the future research may especially support to plan the content of preventive programs more efficiently.

To sum up, confirmation of the findings of the present study with a more representative Turkish sample including females, adolescents, non-gambling individuals in the future research is a requirement at one hand. On the other hand, development and testing of more comprehensive models including the vulnerability and maintenance factors of gambling in the future is another requirement to mature gambling research. The step of the current study was a courageous one in this sense. Moreover, research to define and understand negative consequences of gambling in more operational terms will be rewarding in the long run. Finally, the reasons of not contemplating about changes in the gambling participation in spite of the problems encountered at least for some individuals still stay there mysteriously waiting for the reasonable answers from future research.

# REFERENCES


Abbott, M. W., Voldberg, R. A., Bellringer, M., & Reith, G. (2004). *A Review of Research on Aspects of Problem Gambling*. Report to the Responsibility in Gambling Trust. Auckland, NZ: Gambling Research Center, Auckland University of Technology. Accessible at http://www.rigt.org.uk/reports.asp.

Adams, P. J., Raeburn, J., & De Silva, K. (2009). A question of balance: Prioritizing public health response to harm from gambling. *Addiction, 104*(5), 688-691.

Afifi, T. O., Cox, B. J., Martens, P., Sareen, J., & Enns, M. W. (2010). Demographic and social variables associated with problem gambling among men and women in Canada. *Psychiatry Research, 178*(2), 395-400.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: American Psychiatric Association.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: American Psychiatric Association.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.), text revision. Washington, DC: American Psychiatric Association.

Anholt, G. E., Emmelkamp, P. G., Cath, D. C., vanOppen, P., Nelissen, H., & Smit, J. H. (2004). Do patients with OCD and pathological gambling have similar dysfunctional cognitions? *Behaviour Research and Therapy, 42,* 529-537.

Bagby, R. M., Vachon, D., Bulmash, E. L., Toneatto, T., Quilty, L. C., & Costa, P. T. (2007). Pathological gambling and the five factor model of personality. *Personality and Individual Differences, 43*(4), 873-880.

Balazs, H., Kun, B., & Demetrovics, Z. (2009). Types of pathological gamblers. *Psychiatrica Hungarica, 24*(4), 238-247.

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychology research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: New American Library.

Beconia, E. (1996). Prevalence surveys of problem and pathological gambling in Europe: the case of Germany, Holland and Spain. *Journal of Gambling Studies, 12*, 179-192.

Bergevin, T., Gupta, R., Derevensky, J., & Kaufman, F. (2006). Adolescent gambling: understanding the role of stress and coping. *Journal of Gambling Studies, 22,* 195-208.

Black, D. W., & Moyer, T. (1998). Clinical features and psychiatric comorbidity of subjects with pathological gambling behavior. *Psychiatric Services*, *49*(11), 1434-1439.

Blaszczynski, A. (2005). To formulate gambling policies on the premise that problem gambling is an addiction may be premature (commentary). *Addiction, 100*(9), 1230-1232.

Blaszczynski, A. (2009). Problem gambling: We should measure harm rather than 'cases' (commentary). *Addiction, 104*(7), 1072-1074.

Blaszczynski, A. P., Buhrich, N., & McConaghy, N. (1985). Pathological gamblers, heroin addicts and controls compared on the E.P.Q. 'Addiction Scale'. *British Journal of Addiction, 80,* 315-319.

Blaszczynski, A., & Nower, L. (2002). A pathways models of problem and pathological gambling. *Addiction*, 97, 487-499.

Blaszczynski, A., Steel, Z., & Mcconaghy, N. (1997). Impulsivity in pathological gambling: the antisocial impulsivist. *Addiction, 92*(1), 75-87.

Blaszczynski, A. P., Wilson, A. C., & McConaghy, N. (1986). Sensation seeking and pathological gambling. *British Journal of Addiction, 81,* 113-117.

Bondolfi, G., Osiek, C., & Ferrero, F. (2000). Prevalence estimates of pathological gambling in Switzerland. *Acta Psychiatrica Scandinavica*, *101*, 473-475.

Bondolfi, G., Jermann, F., Ferrero, F., Zullino, D., & Osiek, C. H. (2008). Prevalence of pathological gambling in Switzerland after the opening of casinos and the introduction of new preventive legislation. *Acta Psychiatrica Scandinavica*, *117*, 236-239.

Bonnaire, C., Bungener, C., & Varescon, I. (2009). Subtypes of French pathological gamblers: Comparison of sensation seeking, alexithymia, and depression scores. *Journal of Gambling Studies, 25*, 455-471.

Breen, R. B., & Zuckerman, M. (1999). Chasing in gambling behavior: Personality and cognitive determinants. *Personality and Individual Differences, 27*, 1097-1111.

Brown, S. C., & Mitchell, L. A. (2010). An observational investigation of poker style and the five-factor personality model. *Journal of Gambling Studies, 26,* 229-234.

Çakmak, Ş. (2006). *Psychometric properties of Anxiety Sensivity Index-Revised and the relationship with drinking motives and alcohol use in Turkish university students and patients.* Unpublished master thesis. Middle East Technical University, Ankara.

Chantal, Y., Vallerand, R. J., & Vallieres, E. F. (1994). Construction and validation of the "Motivation towards Gambling Scale". *Loisir & Societe, 17,* 189-212.

Cheetman, A., Allen, N. B., Yücel, M., & Lubman, D. J. (2010). The role of affective dysregulation in drug addiction. *Clinical Psychology Review, 30*, 621-634.

Chiu, J., & Storm, L. (2010). Personality, perceived luck, and gambling attitudes as predictors of gambling involvement. *Journal of Gambling Studies, 26,* 205-227.

Clarke, D., & Clarkson, J. (2009). A preliminary investigation into motivational factors associated with older adults' problem gambling. *International Journal of Mental Health and Addiction, 7,* 12-28.

Chou, K. L., & Afifi, T. O. (2011). Disordered (pathological or problem) gambling and axis I psychiatric disorders: Results from the national epidemiological survey on alcohol and related conditions. *American Journal of Epidemiology, 173*(11), 1289-1297.

Cloutier, M., Ladouceur, R., & Sevingy, S. (2006). Responsible gambling tools: pop-up messages and pauses on video lottery terminals. *The Journal of Psychology, 140,* 434-438.

Connor-Smith, J. K., & Flachbart, C. (2007). Relations between personality and coping: A meta-analysis. *Journal of Personality and Social Psychology, 93*(6), 1080-1107.

Cooper, M. L. Agocha, V. B., & Sheldon, M. S. (2000). A motivational perspective on risky behaviors: the role of personality and affect regulatory processes. *Journal of Personality, 68*(6), 1059-1088.

Cooper, M. L., Frone, M. R. Russell, M., & Mudar, P. (1995). Drinking to regulate positive and negative emotions: a motivational model of alcohol use. *Journal of Personality and Social Psychology, 69*(5), 990-1005.

Cooper, M. L., Russell, M., Skinner, J. B., & Windle, M. (1992). Development and validation of three dimensional measure of drinking motives. *Psychological Assessment, 4*, 123-132.

Coups, E., Haddock, G., & Webley, P. (1998). Correlates and predictors of lottery play in the United Kingdom. *Journal of Gambling Studies, 14*(3), 285-303.

Cox, B. J., Kwong, J., Michaud, V., & Enns, M. W. (2000). Problem and pathological gambling: considerations from a community survey. *Canadian Journal of Psychiatry, 45,* 548-553.

Cox, M., & Klinger, E. (1988). A motivational model of alcohol use. *Journal of Abnormal Psychology, 97*(2), 168-180.

Cox, M., & Klinger, E. (1990). Incentive motivation, affective change, and alcohol use: A model. In Cox, W. M. (Ed.). *Why People Drink: Parameters of Alcohol as a Reinforcer* (pp. 291-314). New York: Gardner Press.

Cunninghan-Williams, R. M., Cottler, L. B., Compton, W. M., & Spitznagel, E. L. (1998). Taking changes: Problem gamblers and mental health disorders: Results from the St. Louis Epidemiological Catchment Area (ECA) Study. *American Journal of Public Health, 83*, 1093-1096.

Currie, S. R., Hodgins, D. C., Wang, J., el-Guebaly, N., Wynne, H., & Chen, S. (2009). Risk of harm among gamblers in the general population as a function of level of participation in gambling activities. *Addiction, 101*, 570-580.

Dechant, K., & Ellery, M. (2011).The effect of including a monetary motive item on the gambling motives questionnaire in a sample of moderate gamblers. *Journal of Gambling Studies*, *27*(2), 331-344.

Delfabbro, P., Lambos, C., King, D., & Puglies, S. (2009). Knowledge and beliefs about gambling in Australian secondary school students and their implications for education strategies. *Journal of Gambling Studies, 25*, 523-539.

Delfabbro, P. H., & Winefield, A. H. (2000). Predictors of irrational thinking in regular slot machine gamblers. *The Journal of Psychology, 134,* 117-128.

Dell'Osso, B., Altamura, A. C., Allen, A., Marazziti, D., & Hollander, E. (2006). Epidemiological and clinical updates on impulse control disorders. *European Archives of Psychiatry and Clinical Neurosciences, 256*, 464-475.

Derevensky, J. L., Gupta, R., & Winters, K. (2003). Prevalence rates of youth gambling: Are the current rates inflated? *Journal of Gambling Studies, 19*(4), 405-425.

DiClemente, C. C., Nidecker, M., & Bellack, A. S. (2008). Motivation and stages of change among individuals with severe mental illness and substance abuse disorders. *Journal of Substance Abuse Treatment, 34*, 25-35.

Dowling, N., Smith, D., & Thomas, T. (2005). Electronic gaming machines: Are they the 'crack cocaine' of gambling. *Addiction, 100,* 33-45.

Duvarcı, İ., & Varan, A. (2000). Descriptive features of Turkish pathological gamblers. *Scandinavian Journal of Psychology*, *41*, 253-260.

Duvarcı, İ., & Varan, A. (2001). Reliability and validity study of the Turkish Form of the South Oaks Gambling Screen. *Turkish Psychiatry Journal*, *12*, 34-45.

el-Guebaly, N., Patent, S. B., Currie, S., Williams, J. V. A., Beck, C. A., Maxwell, C. J., et al. (2006). Epidemiological associations between gambling behavior, substance use & mood anxiety disorders. *Journal of Gambling Studies*, *22*, 275-287.

Ellenbogen, S., Gupta, R., & Derevensky, J. L. (2007). A cross-cultural study of gambling behavior among adolescents. *Journal of Gambling Studies, 23,* 25-39.

Emond, M. S., & Marmurek, H. H. C. (2010). Gambling related cognitions mediate the association between thinking style and problem gambling severity. *Journal of Gambling Studies, 26,* 257-267.

Eysenck, S. B., Eysenck, H. J., & Barrett, P. (1985). A revised version of the psychoticism scale. *Personality and Individual Differences, 6*, 21-29.

Faregh, N., & Leth-Steensen, C. (2011). The gambling profiles of Canadians young and old: game preferences and play frequencies. *International Gambling Studies, 11*(1), 23-41.

Francis, L. J., Brown, L. B., & Philipchalk, R. (1992). The development of an abbreviated form of the Revised Eysenck Personality Questionnaire (EPQR-A): its use among students in England, Canada, the USA and Australia. *Personality and Individual Differences, 13*, 443-449.

Freimuth, M. (2008). *Addicted? Recognizing destructive behavior before it's too late.* Maryland: Rowman & Littlefield Publishing Group.

Gaboury, A., & Ladouceur, R. (1989). Erroneous perceptions and gambling. *Journal of Social Behavior and Personality, 4*, 411-420.

Gençöz, T. (2000). Positive and negative affect schedule: A study of validity and reliability. *Turkish Journal of Psychology, 15*(46), 27-28.

Giacopassi, D., Stitt, B. G., & Vandiver, M. (1998). An analysis of the relationship of alcohol to casino gambling among college students. *Journal of Gambling Studies, 14*(2), 135-149.

Giesbrecht, N. (2009). Controlling gambling: A population based perspective to measurement and monitoring as resource for effective interventions (commentary). *Addiction 104*(7), 1071-1072.

Gilovich, T., & Douglas, C. (1986). Biased evaluations of randomly determined gambling outcomes. *Journal of Experimental Social Psychology, 22*, 228-241.

Gomez-Pena, M., Penelo, E., Granero, R., Fernandez-Aranda, F., & Alvarez-Moya, E. (2011). Motivation to change and pathological gambling: Analysis of the relationship with clinical and psychopathological variables. *British Journal of Clinical Psychology, 50*, 196-210.

Government Inspection Board Report (2009). *Inspection of Activities of Races and Games of Chances within the Years of 2006 and 2007 & Evaluation of Shares from Those Activities for Public Services*. Accessible at http://www.tccb.gov.tr/ddk

Grant, J. E., & Kim, S. W. (2003). Comorbidity of impulse control disorders in pathological gamblers. *Acta Psychiatrica Scandinavica*, *108*, 203-207.

Griffiths, M. D., & Barnes, A. (2008). Internet gambling: an online empirical study among gamblers. *International Journal of Mental Health Addiction*, *6*, 194-204.

Gupta, R., & Derevensky, J. L. (1998). An empirical examination of Jacob's general theory of addictions: Do adolescent gamblers fit the theory? *Journal of Gambling Studies, 14*(1), 17-49.

Hansen, M., & Rossow, I. (2008). Adolescent gambling and problem gambling: does the total consumption model apply? *Journal of Gambling Studies, 24,* 135-149.

Hippel, W. V., Ng, L., Abbot, L., Caldwell, S., Gill, G., & Powell, K. (2009). Executive functioning and gambling: Performance on the trail making test is associated with gambling problems in older adult gamblers. *Aging, Neuropsychology, and Cognition. 16*(6), 654-670.

Hodgings, D. C. (2008). What we see depends mainly on what we look for (commentary). *Addiction*, *103*, 1118-1119.

Hodgins, D. C., & el-Guebaly, N. (2000). Natural and treatment-assisted recovery from gambling problems: a comparison of resolved and active gamblers. *Addiction*, *95*, 777-789.

Hodgins,D. C., Makarchuk, K., el-Guebaly, N., & Peden, N. (2002). Why problem gamblers quit gambling: A comparison of methods and samples. *Addiction*

*Research and Theory*, *10*(2), 203-218.

Hodgins, D. C., & el-Guebaly, N. (2004). Retrospective and prospective reports of precipitants to relapse in pathological gambling. *Journal of Consulting Clinical Psychology*, *72*, 72-80.

Hodgins, D. C., Peden, N., & Cassidy, E. (2005). The association between comorbidity and outcome in pathological gambling: A prospective follow-up of recent quitters. *Journal of Gambling Studies, 21*(3), 255-271.

Hodgins, D. C., Wynne, H., & Makarchuk, K. (1999). Pathways to recovery from gambling problems: Follow-up from a general population survey. *Journal of Gambling Studies, 15,* 93-104.

Ibanez, A., Blanco, C., Donahue, E., Lesieur, H. R., de Castro, I. P., Fernandez-Piqueras, J., et al. (2001). Psychiatric comorbidity in pathological gamblers seeking treatment. *American Journal of Psychiatry*, *158*, 1733-1735.

Jacobs, D. F. (1986). A general theory of addictions: A new theoretical model. *Journal of Gambling Behavior, 2,* 15-31.

Jefferson, S., & Nicki, R. (2003). A new instrument to measure cognitive distortions in the video lottery terminal users: The Informational Biases Scale (IBS). *Journal of Gambling Studies*, *19*(4), 387-403.

Jimenez-Murcia, S., Alvarez-Moya, E. M., Stinchfield, R., Fernandez-Aranda, F., Granero, R., Aymami, N., et al. (2010). Age of onset in pathological gambling: Clinical, therapeutic and personality correlates. *Journal of Gambling Studies, 26,* 235-248.

Johansson, A., & Götestam, K. G. (2003). Gambling and problematic gambling with money among Norwegian youth (12-18 years). *Nordic Journal of Psychiatry, 57*(4), 317-321.

Johansson, A., Grant, J. E., Kim, S. W., Odlaug, B. L., & Götestam, K. G. (2009). Risk factors for problematic gambling: A critical literature review. *Journal of Gambling Studies*, *25*, 67-92.

Joukhador, J., Maccallum, F., & Blaszczynski, A. (2003). Differences in cognitive distortions between problem and social gambler. *Psychological Reports, 92*, 1203-1214.

Kaare, P., Mottus, R., & Konstabel, K. (2009). Pathological gambling in Estonia: relationships with personality, self esteem, emotional states and cognitive ability. *Journal of Gambling Studies, 25*, 377-390.

Karancı, A. N., Dirik, G., & Yorulmaz, O. (2007). Reliability and validity studies of

Turkish translation of Eysenck Personality Questionnaire Revised-Abbreviated. *Turkish Psychiatry Journal, 18*(3), 254-261.

Karlı, Ü. (2008). *The determination of motivational factors of sport gambling university students and their personality and psychological differences from non-gamblers*. Unpublished doctoral dissertation, Middle East Technical University, Ankara.

Katz, Y. J., & Francis, L. J. (200). Hebrew Revised Eysenck Personality Questionnaire: Short form (EPQR-S) and abbreviated form (EPQR-A). *Social Behavior and Personality, 28,* 555-560.

Kennedy, S. H., Welsh, B. R., Fulton, K., Soczynska, J. K., McIntyre, R. S., O'donovan, C., et al. (2010). Frequency and correlates of gambling problems in outpatients with major depressive disorder and bipolar disorder. *Canadian Journal of Psychiatry, 55*(9), 568-576.

Kerber, C. S., Black, D. W., & Buckwalter, K. (2008). Comorbid psychiatric disorders among older adult recovering pathological gamblers. *Issues in Mental Health Nursing, 29*(9), 1018-1028.

Kessler, R. C., Hwang, I., Labries, R., Petukhova, M., Sampson, N. A., Winters, K. C., et al. (2008). DSM-IV pathological gambling in the National Comorbidity Survey Replication. *Psychological Medicine*, *38*, 1351-1360.

Kim, S. W., Grant, J. E. Eckert, E. D., Faris, P. L., & Hartman, B. K. (2006). Pathological gambling and mood disorders: Clinical associations and treatment implications. *Journal of Affective Disorders*, *92*, 109-116.

Korn, D. A., & Shaffer, H. J. (1999). Gambling and the health of the public: Adopting a public health perspective. *Journal of Gambling Studies, 15,* 289-365.

Kruedelbach, N., Walker, H. I., Chapman, H. A., Haro, G., Mateu, C., & Leal, C. (2006). Comorbidity on disorders with loss of impulse-control: pathological gambling, addictions and personality disorders. *Actas Espanolas de Psiquiatria*, *34*, 76-82.

Kuntsche, E., Knibbe, R., Gmel, G., & Engels, R. (2005). Why do young people drink? A review of drinking motives. *Clinical Psychology Review, 25,* 841-861.

Labouvie, E., & Bates, M. E. (2002). Reasons for alcohol use in young adulthood: Validation of a three-dimensional measure. *Journal of Studies on Alcohol, 63*(2), 145-155.

Ladouceur, R. (1996). The prevalence of pathological gambling in Canada. *Journal*

*of Gambling Studies*, *12*, 129-142.

Ladouceur, R., Bouchard, C., Rheaume, N., Jacques, C., Ferland, F., Leblond, J., et al. (2000). Is the SOGS an accurate measure of pathological gambling among children, adolescents and adults? *Journal of Gambling Studies*, *16*(1), 1-21.

Ladouceur, R., Jacques, C., Ferlanf, F., & Girouz, I. (1999). Prevalence of problem gambling: a replication study 7 years later. *Canadian Journal of Psychiatry*, *44*, 802-804.

Lang, K. B., & Omori, M. (2009). Can demographic variables predict lottery and pari-mutuel losses? An empirical investigation. *Journal of Gambling Studies, 25*(2), 171-183.

Lawrence, A. J., Luty, J., Bogdan, N. A., Sahakian, B. J., & Clark, L. (2009). Problem gamblers share deficits in impulsive decision-making with alcohol-dependent individuals. *Addiction, 104,* 1006-1015.

Ledgerwood, D. M., & Petry, N. M. (2005). Current trends and future directions in the study of psychosocial treatments for pathological gambling. *Current Directions in Psychological Science, 14*(2), 89-94.

Ledgerwood, D. M., & Petry, N. M. (2010). Subtyping pathological gamblers based on impulsivity, depression, and anxiety. *Psychology of Addictive Behaviors, 24*(4), 680-688.

Lee, H. P., Chae, P. K., Lee, H. S., & Kim, Y. K. (2007). The five-factor gambling motivation model. *Psychiatry Research*, *150*, 21-32.

Lee, C. K., Lee, Y. K., Bernhard, B. J., & Yoon, Y. S. (2006). Segmenting casino gamblers by motivation: A cluster analysis of Korean gamblers. *Tourism Management, 27*, 856-866.

Lee, S. H., Lee, S. Y., Chung, H. H., & Zwa, H. S. (1999). Postmodern social dysfunction: gambling propensity. *Social Mental Health Review*, *99*, 1-32.

Lesieur, H R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry*, *144*, 1184-1198.

Lesieur, H. R. & Rosenthal, R. J. (1991). Pathological gambling: A review of literature. *Journal of Gambling Studies, 7,* 5-39.

Lin, E. J., Casswell, S., Easton, B., Huckle, T., Asiasiga, L., & You, R. Q. (2010). Time and money spent gambling and the relationship with quality-of-life measures: A national study of New Zealanders. *Journal of Gambling Issues,*

*24*, 33-53.

Linnet, J., Rojskjaer, S., Nygaard, J., & Maher, B. (2006). Episodic changes in gambling using the Iowa gambling task. *Scandinavian Journal of Psychology, 47*, 43-49.

Longman Dictionary of Contemporary English. Accessible at http://www.ldoceonline.com

Lorains, F., Cowlishaw, S., & Thomas, S. A. (2011). Prevalence of comorbid disorders in problem and pathological gambling: Systematic review and meta-analysis of population surveys. *Addiction, 106*(3), 490-498.

Loukas, A., Krull, J. L., Chassin, L. & Carle, A. C. (2000). The relation of personality to alcohol and abuse/dependence in a high–risk sample. *Journal of Personality, 68*(6), 1153-1175.

Malouff, J. M., Thorsteinsson, E. B., & Schutte, N. S. (2005). The relationship between the Five-Factor Model of personality and symptoms of clinical disorders: A meta-analysis. *Journal of Psychopathology and Behavioral Assessment*, *27*(2), 101-114.

Matthews, N., Farnsworth, B., & Griffiths, M. D. (2009). A pilot study of problem gambling among student online gamblers: mood states as predictors of problematic behavior. *CyberPsychology & Behavior*, *12*(6), 741-746.

McCormick, R. A. (1987). Pathological gambling: A parsimonius need state model. *Journal of Gambling Studies, 3*(4), 257-263.

McCormick, R. A., Russo, A. M., Ramirez, L. F., & Taber, J. I. (1984). Affective disorders among pathological gamblers seeking treatment. *American Journal of Psychiatry,141*, 215-218.

McGrath, D. S., & Barrett, S. P. (2009). The comorbidity of tobacco smoking and gambling: A review of the literature. *Drug and Alcohol Review, 28*(6), 676-681.

McNally, A. M., Palfai, T. P., Levine, R. V., & Moore, B. M. (2003). Attachment dimensions and drinking-related problems among young adults: The mediatiwonal role of coping motives. *Addictive behaviors, 28,* 1115-1127.

Melville, K. M., Casey, L. M., & Kavanagh, D. J. (2007). Psychological treatment dropout among pathological gamblers. *Clinical Psychology Review, 27*, 944-958.

Miller, N. V., & Currie, S. R. (2008). A Canadian population level analysis of the roles of irrational gambling cognitions and risky gambling practices as

correlates of gambling intensity and pathological gambling. *Journal of Gambling Studies, 24,* 257-274.

Milosevic, A., & Ledgerwood, D. M. (2010). The subtyping of pathological gambling: A comprehensive review. *Clinical Psychology Review, 30,* 988-998.

Moodie, C. (2008). Student gambling, erroneous cognitions, and awareness of treatment in Scotland. *Journal of Gambling Issues, 21*, 30-54.

Moran, E. (1970). Varieties of pathological gambling. *The British Journal of Psychiatry, 116,* 593-597.

Namrata, R., & Oei, T. P. S. (2009). Factors associated with the severity of gambling problems in community gambling treatment agency. *International Journal of Mental Health Addiction, 7*(1), 124-137.

National Gambling Impact Study Commission (1999). *National Gambling Impact Study Commission final report*. Accessible at http://govinfo.library.unt.edu/ngisc

National Research Council (1999). *Pathological gambling: A critical review.* Washington: National Academy Press. Retrieved August 17, 2011, from http://www.nap.edu/catalog/6329.html

Neighbors, C., Lostutter, T. W., Cronce, J. M., & Larimer, M. E. (2002). Exploring college student gambling motivation. *Journal of Gambling Studies, 18*(4), 361-370.

Newman, S. C., & Thompson, A. H. (2007). The association between pathological gambling and attempted suicide: findings from a national survey in Canada. *Canadian Journal of Psychiatry*, *52*(9), 605-612.

Nordin, C., & Nylander, P. (2007). Temperament and character in pathological gambling. *Journal of Gambling Studies*, *23*(2), 113-120.

Nower, L., & Blaszczynski, A. (2006). Characteristics and gender differences among self-excluded casino problem gamblers: Missouri data. *Journal of Gambling Studies, 22*(1), 81-99.

Nower, L., Derevensky, J. L., & Gupta, R. (2004). The relationship of impulsivity, sensation seeking, coping, and substance use in youth gamblers. *Psychology of Addictive Behaviors*, *18*(1), 49-55.

Oei, T. P. S., Lin, J., & Raylu, N. (2007). Validation of the Chinese Version of the Gambling Related Cognitions Scale (GRCS-C). *Journal of Gambling Studies, 23*, 309-322.

Orford, J. (2005). Disabling the public interest: Gambling strategies and policies for Britain. *Addiction, 100*(9), 1219-1225.

Ormel, J., Rosmalen, J., & Farmer, A. (2004). Neuroticism: A non-informative marker of vulnerability to psychopathology. *Social Psychiatry & Psychiatric Epidemiology, 39*(11), 906-912.

Pallesen, S., Mitsem, M., Kvale, G., Johnsen, B. H., & Molde, H. (2005). Outcome of psychological treatments of pathological gambling. A review and meta-analysis. *Addiction, 100,* 1412-1422.

Parker, J. D. A., Wood, L. M. Bond, B. J., & Shaughnessy, P. (2005). Alexithymia in young adulthood: a risk factor for pathological gambling. *Psychotherapy and Psychosomatics, 74,* 51-55.

Petry, N. (2003a). Moving beyond a dichotomous classification for gambling disorders (commentary). *Addiction, 98,* 1673-1674.

Petry, N. (2003b). A comparison of treatment-seeking pathological gamblers based on preferred gambling activity. *Addiction, 98,* 645-655.

Petry, N. M. (2005a). *Pathological gambling: etiology, comorbidity, and treatment*. Washington: American Psychological Association.

Petry, N. M. (2005b). Stages of change in treatment-seeking pathological gamblers. *Journal of Consulting and Clinical Psychology, 73*, 312-322.

Petry, N. M. (2006). Should the scope of the addictive behaviors be broadened to include pathological gambling. *Addiction, 101*(Suppl. 1), 152-160.

Petry, N. M. (2007). Concurrent and predictive validity of the Addiction Severity Index in pathological gamblers. *The American Journal of Adictions, 16,* 272-282.

Petry, N. M. (2009). First steps first (commentary). *Addiction 104*(7), 1070-1071.

Petry N., & Armentatano, C. (1999). Prevalence, assessment and treatment of pathological gambling: A review. *Psychiatric Services, 50*, 1021-1027.

Petry, N. M., & Kiluk, B. D. (2002). Suicidal ideation and suicide attempts in treatment-seeking pathological gamblers. *Journal of Nervous & Mental Diseases, 190*(7), 462-469.

Petry, N. M., Litt, M. D., Kadden, R., & Ledgerwood, D. M. (2007). Do coping skills mediate the relationship between cognitive-behavioral therapy and reductions in gambling in pathological gamblers? *Addiction, 102*, 1280-1291.

Petry, N., & Mallya, S. (2004). Gambling participation and problems among employees at a university health center. *Journal of Gambling Studies, 20*(2), 155-170.

Petry, N., & Oncken, C. (2002). Cigarette smoking is associated with increased severity of gambling problems in treatment-seeking gamblers. *Addiction, 97*, 745-753.

Petry, N. M., Stinson, F. S., & Grant, B. F. (2005). Comorbidity of DSM-IV pathological gambling and other psychiatric disorders: Results from the national epidemiologic survey on alcohol and related conditions. *Journal of Clini*cal *Psychiatry, 66*, 564-574.

Philippe, F., & Vallerand, R. J. (2007). Prevalence rates of gambling problems in Montreal, Canada: A look at old adults and the role of passion. *Journal of Gambling Studies, 23*(3), 275-283.

Pietrzak, R. H., & Petry, N. M. (2005). Antisocial personality disorder is associated with increased severity of gambling, medical, drug psychiatric problems among treatment-seeking pathological gamblers. *Addiction, 100*, 1183-1193.

Potenza, M. N. (2006). Should addictive disorders include non-substance-related conditions? *Addiction, 101*(Suppl. 1), 142-151.

Potenza, M. N., Steinberg, M. A., & Wu, R. (2005). Characteristics of gambling helpline callers with self-reported gambling and alcohol use problems. *Journal of Gambling Studies, 21*(3), 233-254.

Potenza, M. N., Steinberg, M. A., Wu, R., Rounsaville, B. J., & O'Malley, S. S. (2006). Characteristics of older adult problem gamblers calling a gambling helpline. *Journal of Gambling Studies, 22,* 241-254.

Prochaska, J. O., & Norcross, J. C. (2003). *Systems of psychotherapy: A transtheoretical analysis*. CA: Brooks/Cole.

Raylu, N., & Oei, T. P. (2002). Pathological gambling: A comprehensive review. *Clinical Psychology Review*, *22*(7), 1009-1061.

Raylu, N., & Oei, T. P. (2004a). Role of culture in gambling and problem gambling. *Clinical Psychology Review*, *23*, 1087-1114.

Raylu, N., & Oei, T. P. S. (2004b). The Gambling Related Cognitions Scale (GRCS): Development, confirmatory factor validation and psychometric properties. *Addiction, 99*, 757-769.

Rockloff, M. J., & Schofield, G. (2004). Factor analysis of barriers to treatment of problem gambling. *Journal of Gambling Studies*, *20*(2), 121-126.

Rodda, S., Brown, S. L., & Phillips, J. G. (2004). The relationship between anxiety, smoking, and gambling in electronic gaming machine players. *Journal of Gambling Studies, 20*(1), 71-81.

Rodgers, B., Caldwell, T., & Butterworth, P. (2009). Measuring gambling participation. *Addiction, 104,* 1065-1069.

Rodriguez-Jimenez, R., Avila, C., Jimenez-Arriero, M. A., Ponce, G., Monasor, R., Jimenez, M., Aragües, M., Hoenicka, J., Rubio, G., Palomo, T. (2006). Impulsivity and sustained attention in pathological gamblers: Influence of childhood ADHD history. *Journal of Gambling Studies*, *22*(4), 451-461.

Room, R. (2005). The wheel of fortune: Cycles and reactions in gambling policies (commentary). *Addiction, 100*(9), 1226-1227.

Rosenthal, R. J. (1989). Pathological gambling and problem gambling: problems of definitions and diagnosis. Shaffer H. J., Stein, S. A., Gambino, B., Cummings, T. N. (Ed). *Compulsive Gambling: Theory, Research, And Practice* (pp. 101-125). Lexington, Mass: Lexington Books.

Rosenthal, R. J. (2003). Distribution of the DSM-IV criteria for pathological gambling. *Addiction, 98,* 1674-1675.

Roy, A., Custer, R., Lorenz, V., & Linnoila, M. (1989). Personality factors and pathological gambling. *Acta Psychiatrica Scandinavica*, *80*(1), 37-39.

Scherrer, J. F., Slutske, W. S., Xian, H., Waterman, B., Shah, K. R., Voldberg, R., et al. (2007). Factors associated with pathological gambling at 10-year follow-up in a national sample of middle-aged men. *Addiction*, *102*, 970-978.

Schmitz, J. M. (2005). The interface between impulse-control disorders and addictions: Are pleasure pathway responses shared neurobiological substrates? *Sexual Addiction & Compulsivity, 12,* 149-168.

Shaffer, H. J. (2005). From disabling to enabling the public interest: Natural transitions from gambling exposure to adaptation and self-regulation (commentary). *Addiction, 100*(9), 1227-1230.

Shaffer, H. J., Hall, M. N., & Vander Bilt, J. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: A research synthesis. *American Journal of Public Health*, *89*(9), 1369-1376.

Shaffer, H. J., LaBrie, R. A., LaPlante, D. A., Nelson, S. E., & Stanson, M. V. (2004). The roads less traveled: Moving from distribution to determinants in the study of gambling epidemiology. *Canadiann Journal of Psychiatry, 49(8),* 504-516.

Sharpe, L. (2002). A reformulated cognitive-behavioral model of problem gambling: A biopsychosocial perspective. *Clinical Psychology Review, 22*, 1-25.

Shead, N. W., Callan, M. J., & Hodgins, D. C. (2008). Probability discounting among gamblers: Differences across problem gambling severity and affect-regulation expectancies. *Personality and Individual Differences, 45*(6), 536-541.

Shead, N. W., & Hodgins, D. C. (2009). Affect-regulation expectancies among gamblers. *Journal of Gambling Studies, 25*, 357-375.

Simons, J., Correia, C. J., & Carey, K. B. (2000). A comparison of motives for marijuana and alcohol use among experienced users. *Addictive Behaviors, 25*(1), 153-160.

Skokavskas, N., & Satkeviciute, R. (2007). Adolescents pathological gambling in Lithuania. *Nordic Journal of Psychiatry, 61*(2), 86-91.

Slutske, W. S., Caspi, A. Moffitt, T. E., & Poulton, R. (2005). Personality and problem gambling: A prospective study of a birth cohort of young adults. *Archives of General Psychiatry*, *62*, 769-775.

Sproston, K., Erens, B., & Orford, J. (2000). Gambling Behavior in Britain: Results from the British Gambling Prevalence Survey. Accessible at: http://www.gamblingcommission.gov.uk

Spunt, B. (2002). Pathological gambling and substance misuse. *Substance Use & Misuse, 37*(8), 1299-1304.

Staines, G., Magura, S., Rosenblum, A., Fong, C., Kosanke, N., Foote, J., et al. (2003). Predictors of drinking outcomes among alcoholics. *The American Journal of Drug and Alcohol Abuse, 29*(1), 203-218.

Steel, Z., & Blaszczynski, A. (1998). Impulsivity, personality disorders and pathological gambling. *Addiction, 93*(6), 895-905.

Stewart, S. H., Brown, C. G., Devoulyte, K., Theakston, J., & Larsen, S. E. (2006). Why do women with alcohol problems binge eat? Exploring connections between binge-eating and heavy drinking in women receiving treatment for alcohol problems. *Journal of Health Psychology, 11*(3), 409-425.

Stewart, S. H., & Devine, H. (2000). Relations between personality and drinking motives in young adults. *Personality and Individual Differences, 29,* 495-511.

Stewart, S. H., Loughlin, H. L., & Rhyno, E. (2001). Internal drinking motives mediate personality domain – drinking relations in young adults. *Personality and Individual Differences, 30,* 271-286.

Stewart, S. H., & Zack, M. (2008). Development and psychometric evaluation of a three-dimensional gambling motives questionnaire. *Addiction*, *103*, 1110-1117.

Stewart, S. H., Zack, M., Collins, P., Klein, R. M., & Fragopoulos, F. (2008). Subtyping pathological gamblers on the basis of affective motivations for gambling: relations to gambling problems, drinking problems, and affective motivations for drinking. *Psychology of Addictive Behaviors, 22*(2), 257-268.

Stinchfield, R., Govoni, R., & Frisch, G. R. (2005). DSM-IV Diagnostic criteria for pathological gambling: Reliability, validity and classification accuracy. *The American Journal on Addictions, 14,* 73-82.

Stuhldreher, W. L., Stuhldreher, T. J., & Forrest, K. Y. Z. (2007). Gambling as an emerging health problem on campus. *Journal of American College Health, 56*(1), 75-83.

Tang, C. S., Wu, A. M., Tang, J. Y., & Yan, E. C. (2010). Reliability, validity, and cut scores of the South Oaks Gambling Screen for Chinese. *Journal of Gambling Studies, 26*(1), 145-158.

Tavares, H., Carneiro, E., Sanches, M., Pinsky, I., Caetano, R., Zaleski, M., et al. (2010). Gambling in Brazil: Lifetime prevalences and socio-demographic correlates. *Psychiatry Research, 180*(1), 35-41.

Tavares, H., Zilberman, M. L.,& el-Guebaly, N. (2003). Are there cognitive and behavioural approaches specific to the treatment of pathological gambling? *Canadian Journal of Psychiatry, 48,* 22-27.

Theakston, J. A., Stewart, S. H., Dawson, M. Y., Knowlden-Loewen, S. A. B., & Lehman, D. R. (2004). Big-Five personality domains predict drinking motives. *Personality and Individual Differences, 37,* 971-984.

Toce-Gerstein, M., Gerstein, D. R., & Volberg, R. A. (2003). A hierarchy of gambling disorders in the community. *Addiction*, 98, 1661-1662.

Toneatto, T., Lecce, J., & Bagby, M. (2009). Alexithymia and pathological gambling. *Journal of Addictive Diseases, 28,* 193-198.

Vachon, D. D., & Bagby, R. M. (2009). Pathological gambling subtypes. *Psychological Assessment, 21*(4), 608-615.

VanderBilt, J., Dodge, H. H., Pandav, R., Shaffer, H. J., & Ganguli, M. (2004). Gambling participation and social support among older adults: A longitudinal community study. *Journal of Gambling Studies*, *20*(4), 373-390.

Vitaro, F., Arseneault, L., & Tremblay, R. E. (1999). Impulsivity predicts problem

gambling in low SES adolescent males. A*ddiction, 94*(4), 565-575.

Voldberg, R. A., Abbot, M. W., Rönnberg, S., & Munck, I. M. E. (2001). Prevalence and risks of pathological gambling in Sweden. *Acta Psychiatrica Scandinavica*, *104*(4), 250-256.

Voldberg, R. A., Nysse-Corris, K. L., Gerstein, D. R. (2006). California Problem Gambling Prevalence Study Notes. Retrieved August 12, 2011, from http://www.adp.ca.gov/opg/pdf/CA_Problem_Gambling_Prevalence_Survey-Final_report.pdf

Wardle, H., Moody, A., Spence, S., Orford, J., Voldberg, R., Jotangia, D., et al. (2011). British Gambling Prevalence Survey 2010. Accessible at: http://www.gamblingcommission.gov.uk

Wardle, H., Sproston, K., Orford, J., Erens, B., Griffiths, M., Constantine, R., et al. (2007). British Gambling Prevalence Survey 2007. Accessible at: http://www.gamblingcommission.gov.uk

Watson, D., & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the five-factor model. *Journal of Personality, 60,* 441-476.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063-1070.

Welte, J. W., Barnes, G. M., Tidwell, M. C. O., & Hoffman, J. H. (2011). Gambling and problem gambling across the lifespan. *Journal of Gambling Studies, 27*, 49-61.

Welte, J. W., Barnes, G. M., Wieczorek, W. F., Tidwell, M. C. O., & Hoffman, J. H. (2007). Types of gambling and availability as risk factors for problem gambling: A tobit regression analysis by age and gender. *International Gambling Studies, 7*(2), 183-198.

Welte, J., Barnes, G. M., Wieczorek, W., Tidwell, M. C., & Parker, J. (2001). Alcohol and gambling pathology among U.S. adults: Prevalence and demographic patterns and comorbidity. *Journal of Studies on Alcohol, 62*, 706-712.

Welte, J. W., Barnes, G. M., Wieczorek, W. F., Tidwell, M. C. O., & Parker, J. C. (2004). Risk factors for pathological gambling. *Addictive Behaviors*, *29*, 323-335.

Westhpal, J. R. (2008). Pathological gambling: Psychiatric models. *International Journal of Mental Health & Addiction, 6,* 602-618.

Wiebe, J., Single, E., & Falkowski-Ham, A. (2003a). Exploring the evolution of problem gambling: A one year follow-up study. Accessible at http://www.responsiblegambling.org/articles/

Wiebe, J., Cox, B., & Falkowski-Ham, A. (2003b). Psychological and social factors associated with problem gambling in Ontario: A one year follow-up study. Accessible at http://www.responsiblegambling.org/articles/

Wong, I. L. K., & Ernest, M. T. (2003). Prevalence estimates of problem and pathological gambling in Hong Kong. *American Journal of Psychiatry*, *160*(7), 1353-1354.

Wood, R. T. A., Gupta, R., Derevensky, J. L., & Griffiths, M. D. (2004). Video game playing and gambling in adolescents. *Journal of Child and Adolescent Substance Abuse, 14,* 77-100.

Wood, R. T. A., & Griffiths, M. D. (2007). A qualitative investigation of problem gambling as an escape-based coping strategy. *Psychology and Psychotherapy: Theory, Research and Practice, 80,* 107-125.

Wood, R. T. A., & Williams, R. J. (2007). Problem gambling on the Internet: implications for Internet gambling policy in North America. *New Media & Society*, *9*, 520-542.

Wulfert, E., Franco, C., Williams, K., Roland, B., & Maxson, J. H. (2008). The role of money in the excitement of gambling. *Psychology of Addictive Behaviors, 22*, 380-390.

Yorulmaz, O. (2007). *A comprehensive model for obsessive-compulsive disorder symptoms: A cross- cultural investigation of cognitive and other vulnerability factors.* Unpublished doctoral dissertation, Middle East Technical University, Ankara.

# APPENDIX A

## Factor analysis of the Gambling Related Cognitions Scale (GRCS)

A Principal Components Factor Analysis with Varimax rotation was carried out on the 23 items of GRCS. Items loaded on six factors according to the initial analysis. However, when examinations of scree-plot and factor structure of the original scale were taken into consideration, the items were forced into five factors. Results of the factorability indicated that the solution was appropriate for factor analysis (KMO = .85). Loadings of items on factors, percent of variance, and eigenvalues are shown in Table 39 together with internal reliability scores of the factors of the scale and item-total correlation ranges.

Five factors composed of twenty three items and explained 48.79 % of the total variance. Out of the total explained variance 22.77 %, 8.43 %, 7.47 %, 5.30%, and 4.82 % were explained by these five factors. The items' diffusion under various factors with respect to their loadings within a quite different fashion as compared to the original factor structure of the scale confused both labeling and interpretation of the factors. Examination of the content of the items did not facilitate the labeling of the factors. The exceptional factor was the first factor, namely GRCS-inability to stop (GRCS-IS). Second factor was a combination of GRCS-predictive control (GRCS-PC) and GRCS-interpretive bias (GRCS-IB), third factor was a combination of GRCS-gambling expectancies (GRCS-EXP) and GRCS-PC, fourth factor was a

combination of GRCS-illusion of control (GRCS-IC) and GRCS-PC, and fifth factor was a combination of GRCS-EXP, GRCS-IC, GRCS-IB in terms of original GRCS.

Table 39. *Varimax-rotated factor loadings of the GRCS items and explained variance of the five factors*

| | Factors | | | | |
|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** |
| % of Variance | 22.771 | 8.428 | 7.465 | 5.301 | 4.824 |
| Eigenvalues | 5.237 | 1.938 | 1.717 | 1.219 | 1.109 |
| Cronbach's alpha (Total= 0.83) | .78 | .68 | .58 | .56 | .54 |
| Item-Total Correlation Range (Total=.09-.60) | .49-.59 | .39-.53 | .37-.42 | 24-.40 | .23-.37 |
| Items | | | | | |
| 7 It is difficult to stop gambling as I am so out of control. | **.72** | .27 | -.13 | .03 | .07 |
| 17 I'm not strong enough to stop gambling. | **.69** | .17 | -.20 | .20 | .10 |
| 2 I can't function without gambling. | **.68** | .16 | .28 | -.11 | .12 |
| 21 I will never be able to stop gambling. | **.68** | -.05 | .22 | .12 | .03 |
| 12 My desire to gamble is so overpowering. | **.65** | .32 | .28 | .01 | .09 |
| 20 Remembering how much money I won last time makes me continue gambling. | .12 | **.60** | .14 | .17 | .08 |
| 4 Losses when gambling, are bound to be followed by a series of win. | -.05 | **.57** | .31 | -.08 | .11 |
| 15 Relating my losses to probability makes me continue gambling. | .26 | **.57** | -.01 | .14 | -.01 |
| 9 A series of losses will provide me with a learning experience that will help me win later. | .05 | **.54** | .42 | -.01 | .15 |
| 10 Relating my losses to bad luck and bad circumstances makes me continue gambling. | .34 | **.54** | .05 | -.07 | .16 |
| 14 When I have a win once, I will definitely win again. | .16 | **.51** | .07 | .27 | .13 |
| 1 Gambling makes me happier. | .21 | .17 | **.69** | -.21 | .04 |
| 22 I have some control over predicting my gambling wins. | .06 | .08 | **.67** | .10 | -.03 |
| 16 Having a gamble helps reduce tension and stress. | -.02 | .29 | **.59** | .13 | .07 |
| 18 I have specific rituals and behaviors that increase my chances of winning. | .10 | -.09 | .08 | **.68** | .22 |
| 19 There are times that I feel lucky and thus, gamble those times only. | -.16 | .16 | -.11 | **.59** | .03 |
| 8 Specific numbers and colors can help increase my chances of winning. | .15 | -.09 | .31 | **.58** | .18 |
| 13 I collect specific objects that help increase my chances of winning. | .11 | .21 | -.12 | **.54** | -.02 |
| 23 If I keep changing my numbers, I have less chances of winning than if I keep the same numbers every time. | .12 | .38 | .23 | **.43** | -.28 |
| 6 Gambling makes things seem better. | .24 | .16 | .23 | .10 | **.68** |
| 3 Praying helps me win. | -.01 | .08 | -.13 | .21 | **.65** |
| 5 Relating my winnings to my skill and ability makes me continue gambling. | .11 | .38 | .25 | -.15 | **.42** |
| 11 Gambling makes the future brighter. | .27 | .38 | .03 | .11 | **.38** |

# APPENDIX B

## Factor analysis results of the Gambling Motives Scale (GMS)

A Principal Components Factor Analysis with Varimax rotation was carried out on 35 items of the GMS. Minor missing data were replaced with means. Results of the factorability indicated that the solution was appropriate for factor analysis (KMO = .87). Oblique rotation was chosen to allow for intercorrelation among factors due to known intercorrelations among different motives for gambling. Item 24 ('Friends insisted gambling') which loaded under socialization motive in the original scale, loaded under excitement motive in the present study decreasing internal consistency of the whole scale. This item had the lowest communality value (.21), the lowest loading score (.27), and the lowest item-total correlation score (.17) as compared to other items of GMS. This item may be relevant for types of gambling that require the presence of someone else to initiate and carry out the gambling activity such as playing cards. However, betting on sports or horse-races does not necessitate the existence of someone else for actualization of gambling since the mentioned types of betting are suitable to gamble individually. Thus, unsuitability of this item may be connected with sample composition of the present study rather than being the deficiency of the item. Item 24 was deleted for the rest of the analyses.

Items loaded on seven factors according to initial analysis. However, after the examination of scree-plot, and interpretation convenience and factor structure of the

original scale were taken into consideration, the items were forced into five factors in the first step. In the second step, when cross-loadings of several items on both amusement and excitement factors according to the results of the first step and proximity of the related items with respect to content are taken into consideration, the items were forced into four factors with the expectation of interpretation convenience and approximation to the factor structure of the original scale. For instance items that could be conceptualized as part of 'amusement' scale (e.g. 'Because it's fun') and items that could be conceptualized as part of 'excitement' scale (e.g. 'Because it's exciting') were both formulated and validated as part of 'enhancement' motive of Gambling Motives Questionnaire adapted by Stewart and Zack (2008) modeled from Drinking Motives Questionnaire (Cooper et al., 1992). It was expected that the items of amusement and excitement factors could load on a single factor. Table 40 presents the results when the items were forced into 5 factors whereas Table 41 presents the results when the items were forced into 4 factors. Loadings of variables on the factors, percent of variance, eigenvalues, and internal consistency values of the factors according to results of the two steps mentioned are also shown in the next two tables. The item loadings represented in the current study with five factors of GMS seemed to differ from the original scale. Overall, 11 items out of 34 were represented under different motives as compared to the original scale. On the other hand, all of the items that were loaded under amusement and excitement factors in the original scale were represented under a single factor which was called amusement/excitement scale in the second step. Overall still three items (27, 31, and 32) loaded on different factors as compared to the original scale in this step.

Table 40. *Varimax-rotated factor loadings of the GMS items and explained variance of the five factors*

| | Factors | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| | avoidance | amusement | monetary | socialization | excitement |
| % of Variance | 21.974 | 11.551 | 8.972 | 4.791 | 3.686 |
| Eigenvalues | 7.471 | 3.927 | 3.051 | 1.629 | 1.253 |
| Cronbach's alpha (Total= 0.89) | 0.83 | 0.81 | 0.84 | 0.80 | 0.75 |
| Item-Total Cor. Range (Total=.30-.54) | .40-.65 | .42-.62 | .47-.73 | .43-.65 | .42-.64 |
| Items | | | | | |
| 13 Feed depressed/sad | **.77** | -.04 | -.01 | .12 | .08 |
| 3 Feel pain/troubled | **.73** | -.14 | .11 | .07 | .12 |
| 23 Feel tense/anxious | **.71** | .14 | -.01 | .01 | -.11 |
| 18 Feel angry/upset | **.70** | -.01 | .13 | .12 | -.06 |
| 8 Feel lonely/escape from loneliness | **.66** | .08 | -.04 | .02 | .17 |
| 28 Feel pressured/things don't go well | **.65** | .09 | .12 | .04 | -.23 |
| 27 Have a financial difficulty and no money | **.47** | .02 | .32 | .13 | -.29 |
| 31 Can't change my life without gambling | **.41** | .30 | .16 | .13 | .04 |
| 35 Easily absorbed in gambling | **.41** | .39 | .22 | .05 | .21 |
| 16 Enjoy intense feelings | .16 | **.69** | .01 | .19 | .16 |
| 15 Energize life | -.07 | **.63** | .04 | .37 | -.06 |
| 32 Forget about stressful reality | .29 | **.63** | .09 | .08 | .06 |
| 30 Want to experience excitement and pleasure | -.10 | **.61** | .10 | -.01 | .34 |
| 25 Relieve stress | .01 | **.58** | .03 | .28 | .12 |
| 26 Have fun in guessing the results | -.22 | **.54** | .20 | .01 | .17 |
| 33 Want to feel triumph when winning | .04 | **.48** | .39 | .03 | .23 |
| 10 Escape from burdensome routines | .16 | **.48** | .06 | .31 | .25 |
| 21 Want to enjoy uncertainty | .15 | **.40** | .07 | .19 | .30 |
| 12 Win big money immediately | .12 | .09 | **.82** | .01 | .08 |
| 7 Make money easily | .09 | .09 | **.81** | -.02 | .12 |
| 34 May win big money | .08 | .18 | **.81** | -.04 | -.01 |
| 2 Win big money with small money | -.06 | .08 | **.67** | .02 | .19 |
| 22 Heard that they won jackpot | .08 | .06 | **.59** | .10 | .12 |
| 17 Need big money | .41 | .03 | **.58** | .05 | -.15 |
| 9 Make the atmosphere comfortable for meeting people | .09 | .18 | .01 | **.81** | -.10 |
| 14 Makes it easy to meet new people | .05 | .17 | .02 | **.80** | -.07 |
| 4 Socialize with others | .08 | -.01 | -.03 | **.66** | .33 |
| 29 Get along with others favorably | .06 | .31 | .02 | **.60** | .16 |
| 19 Join with gathering in spite of no intention of gambling | .21 | .14 | .08 | **.56** | .25 |
| 5 Change moods | .11 | .29 | .06 | **.42** | .35 |
| 1 Have fun in risk taking | -.10 | .25 | .11 | .04 | **.71** |
| 6 Enjoy thrilling experience in risk | -.08 | .31 | .18 | .09 | **.67** |
| 11 Have fun in competing with others | .04 | .20 | .10 | .29 | **.52** |
| 20 Enjoy leisure time and activity | .01 | .45 | .16 | .18 | **.52** |

Table 41. *Varimax-rotated factor loadings of the GMS items and explained variance of the four factors*

| | Factors | | | |
|---|---|---|---|---|
| | 1 amusement/ excitement | 2 avoidance | 3 monetary | 4 socialization |
| % of Variance | 21.974 | 11.551 | 8.972 | 4.791 |
| Eigenvalues | 7.471 | 3.927 | 3.051 | 1.629 |
| Cronbach's alpha (Total= 0.89) | 0.87 | 0.82 | 0.84 | 0.80 |
| Item-Total Cor. Range (Total=.29-.54) | .41-.62 | .35-.66 | .47-.73 | .50-.66 |
| Items | | | | |
| 30 Want to experience excitement and pleasure | **.68** | -.08 | .09 | .02 |
| 20 Enjoy leisure time and activity | **.68** | .01 | .14 | .18 |
| 6 Enjoy thrilling experience in risk | **.67** | -.11 | .16 | .06 |
| 1 Have fun in risk taking | **.65** | -.14 | .09 | -.01 |
| 16 Enjoy intense feelings | **.63** | .20 | -.01 | .24 |
| 26 Have fun in guessing the results | **.53** | -.19 | .19 | .04 |
| 33 Want to feel triumph when winning | **.52** | .06 | .38 | .05 |
| 32 Forget about stressful reality | **.52** | .33 | .08 | .13 |
| 10 Escape from burdensome routines | **.52** | .17 | .05 | .33 |
| 25 Relieve stress | **.52** | .05 | .02 | .32 |
| 21 Want to enjoy uncertainty | **.49** | .16 | .06 | .20 |
| 11 Have fun in competing with others | **.48** | .01 | .09 | .26 |
| 15 Energize life | **.44** | -.02 | .04 | .43 |
| 5 Change moods | **.44** | .10 | .04 | .41 |
| 35 Easily absorbed in gambling | **.44** | .42 | .20 | .06 |
| 13 Feed depressed/sad | .02 | **.75** | -.02 | .10 |
| 23 Feel tense/anxious | .03 | **.73** | -.02 | .02 |
| 3 Feel pain/troubled | -.03 | **.71** | .10 | .04 |
| 18 Feel angry/upset | -.04 | **.70** | .13 | .11 |
| 28 Feel pressured/things don't go well | -.08 | **.67** | .12 | .06 |
| 8 Feel lonely/escape from loneliness | .16 | **.65** | -.05 | .01 |
| 27 Have a financial difficulty and no money | -.16 | **.50** | .33 | .15 |
| 31 Can't change my life without gambling | .26 | **.41** | .15 | .15 |
| 12 Win big money immediately | .14 | .12 | **.81** | -.01 |
| 34 May win big money | .16 | .10 | **.81** | -.03 |
| 7 Make money easily | .17 | .09 | **.81** | -.03 |
| 2 Win big money with small money | .20 | -.06 | **.66** | .01 |
| 22 Heard that they won jackpot | .13 | .08 | **.59** | .09 |
| 17 Need big money | -.06 | .43 | **.59** | .05 |
| 9 Make the atmosphere comfortable for meeting people | .06 | .11 | .01 | **.83** |
| 14 Makes it easy to meet new people | .08 | .06 | .03 | **.82** |
| 4 Socialize with others | .19 | .05 | -.04 | **.63** |
| 29 Get along with others favorably | .33 | .07 | .02 | **.61** |
| 19 Join with gathering in spite of no intention of gambling | .26 | .20 | .07 | **.55** |

# APPENDIX C

## Demografik Bilgi Formu

**1.** Yaşınız: .....

**2.** Mesleğiniz: .....

**3.** Şu an yaptığınız iş ve süresi:

| | |
|---|---|
| ..... süredir ..... işi yapıyorum | ..... süredir çalışmıyorum. |

**4.** Öğrenim düzeyiniz:

| | | | |
|---|---|---|---|
| ( ) Okur-yazar değil | ( ) Okur-yazar | ( ) İlkokul | ( ) Ortaokul |
| ( ) Lise | ( ) Üniversite | ( ) Lisans üstü / Doktora | |

**5.** Bugüne kadar psikiyatrik bir tanı aldınız mı?
( ) Evet (belirtiniz) ..... ( ) Hayır

**6.** Medeni haliniz?

| | | | |
|---|---|---|---|
| ( ) Bekar | ( ) Ayrılmış | ( ) Dul | (1) /(2)/(3)/(4). evliliğim |

**7.** Varsa çocuklarınızın sayısı?

| | | | | |
|---|---|---|---|---|
| ( ) Yok | ( ) 1 | ( ) 2 | ( ) 3 | ( ) 4 ve daha fazla |

**8.** Kimlerle birlikte yaşıyorsunuz?

| | | | |
|---|---|---|---|
| ( ) Eşiniz ve varsa çocuklarınız ile | ( ) Anne-baba, varsa kardeşleriniz | ( ) Eşinizden ayrı, çocuklarınız ile | ( ) Yalnız |
| ( ) Akrabalarınız ile | ( ) Arkadaşlarınız ile | ( ) Sevgiliniz ile | ( ) Diğer ..... |

**9.** Alkol kullanıyor musunuz?

| | | |
|---|---|---|
| ( ) Hayır | ( ) Kullanıyordum, bıraktım | ( ) Evet |

**10.** Sigara kullanıyor musunuz?

| | | |
|---|---|---|
| ( ) Hayır | ( ) Kullanıyordum, bıraktım | ( ) Evet |

**11.** Alkol ve sigara haricinde herhangi bir madde (esrar, uyuşturucu hap) kullanıyor musunuz?

| | | |
|---|---|---|
| ( ) Hayır | ( ) Kullanıyordum, bıraktım | ( ) Evet |

**12.** Aylık ortalama şahsi geliriniz ne kadardır?

| | | | | | |
|---|---|---|---|---|---|
| ( ) Gelirim yok | ( ) 1000 Liradan az | ( ) 1000 - 2000 Lira arası | ( ) 2000 – 3000 Lira arası | ( ) 3000 – 4000 Lira arası | ( ) 4000 Liradan fazla |

**13.** Aylık ortalama evinizin geliri ne kadardır?

| | | | | | |
|---|---|---|---|---|---|
| ( ) Gelirimiz yok | ( ) 1000 Liradan az | ( ) 1000 - 2000 Lira arası | ( ) 2000 – 3000 Lira arası | ( ) 3000 – 4000 Lira arası | ( ) 4000 Liradan fazla |

**14.** Aile ve yakın akrabalarınızda şans/bahis oyunları (at yarışı, iddaa, vb.), kumar (parasına okey, barbut, vb.) oynayan ya da oynayanlar var mıdır?

| | |
|---|---|
| ( ) Hayır | ( ) Evet (yakınlık derecenizi ve oynadığı oyun türünü belirtiniz)<br>.....<br>.....<br>..... |

# APPENDIX D

## Şans/Bahis Oyunları – Kumar ile İlgili Tutum/Düşünce/Davranış Bilgi Formu

1. Sizin için uygun seçeneği işaretleyin:

( ) Şans/bahis oyunları - kumar oynama alışkanlıklarımı önümüzdeki altı ay içinde değiştirmeyi düşünmüyorum.
( ) Şans/bahis oyunları - kumar oynamamın yarattığı sorunları düşünüyorum ve önümüzdeki altı ay içinde bırakmayı planlıyorum.
( ) Şans/bahis oyunları - kumar oynamamak için bazı düzenlemeler yaptım ve oynamamaya çalışıyorum.

2. Aşağıdaki oyunların şans/bahis oyunu mu yoksa kumar mı olduğunu düşündüğünüzü, ilgili kutucuğu işaretleyerek belirtin.

| | Şans/bahis oyunu | Kumar |
|---|---|---|
| At yarışı | ( ) | ( ) |
| İddaa | ( ) | ( ) |
| Parasına kâğıt oyunları (yanık, poker ….. gibi) | ( ) | ( ) |
| Parasına okey | ( ) | ( ) |
| Parasına zar oyunları (barbut ….. gibi) | ( ) | ( ) |
| Horoz dövüşü | ( ) | ( ) |
| Spor-Toto | ( ) | ( ) |
| Sayısal Loto / Şans Topu / On numara / Süper Loto | ( ) | ( ) |
| Kazı Kazan / Hemen Kazan | ( ) | ( ) |
| Milli Piyango | ( ) | ( ) |
| Borsada oynama | ( ) | ( ) |
| Casino oyunları | ( ) | ( ) |
| Parasına beceri isteyen oyunlar oynama (bilardo …… gibi) | ( ) | ( ) |
| Internet'te parasına oynanan oyunlar | ( ) | ( ) |

3. Şans/bahis oyunları (at yarışı, iddaa, vb.), kumar (parasına okey, barbut, vb.) gibi oyunlara haftada ortalama ne kadar saat ayırıyorsunuz (At yarışı, iddaa gibi oyunlar için program inceleme, kupon doldurma gibi süreleri de dahil ederek belirtin)? .....saat

4. Ortalama haftada şans/bahis oyunları (at yarışı, iddaa, vb.), kumar için ne kadar para harcıyorsunuz ?
.....TL

5. En uzun süredir oynadığınız oyunu, oyun adı ile birlikte kaç aydır oynadığınızı belirtin?

   .....

6. En sık oynadığınız oyunu, oyun adı ile birlikte haftada kaç gün oynadığınızı belirtin.

   ……..

7. Oynadığınız oyun ya da oyunları bırakmayı planlıyor musunuz?

( ) Hayır

( ) Evet (yanıtınız 'evet' ise) ne zaman: .....

niçin: .....

8. Şans/bahis oyunları – kumar oynamanın aşağıdaki boyutlarda yaşamınıza vermiş olduğu etkileri belirtin.

| | Hiç zararı yok | Biraz zararı var | Oldukça fazla zararı var | Çok fazla zararı var |
|---|---|---|---|---|
| Aile ilişkilerim | ( ) | ( ) | ( ) | ( ) |
| Arkadaş ilişkilerim | ( ) | ( ) | ( ) | ( ) |
| İş yaşamım | ( ) | ( ) | ( ) | ( ) |
| Maddi durumum | ( ) | ( ) | ( ) | ( ) |
| Duygusal durumum | ( ) | ( ) | ( ) | ( ) |

# APPENDIX E

## Eysenck Kişilik Anketi-Revize Edilmiş ve Kısaltılmış Form

Lütfen aşağıdaki herbir soruyu 'Evet' ya da 'Hayır'ı yuvarlak içine alarak cevaplayın

| | | |
|---|---|---|
| 1. | Duygu durumunuz sıklıkla mutlulukla mutsuzluk arasında değişir mi? | Evet Hayır |
| 2. | Konuşkan bir kişi misiniz? | Evet Hayır |
| 3. | Borçlu olmak sizi endişendirir mi? | Evet Hayır |
| 4. | Oldukça canlı bir kişi misiniz? | Evet Hayır |
| 5. | Hiç sizin payınıza düşenden fazlasını alarak açgözlülük yaptığınız oldu mu? | Evet Hayır |
| 6. | Garip ya da tehlikeli etkileri olabilecek ilaçları kullanır mısınız? | Evet Hayır |
| 7. | Aslında kendi hatanız olduğunu bildiğiniz birşeyi yapmakla hiç başka birini suçladınız mı? | Evet Hayır |
| 8. | Kurallara uymak yerine kendi bildiğiniz yolda gitmeyi mi tercih edersiniz? | Evet Hayır |
| 9. | Sıklıkla kendinizi herşeyden bıkmış hisseder misiniz? | Evet Hayır |
| 10. | Hiç başkasına ait olan bir şeyi (toplu iğne veya düğme bile olsa) aldınız mı? | Evet Hayır |
| 11. | Kendinizi sinirli bir kişi olarak tanımlar mısınız? | Evet Hayır |
| 12. | Evliliğin modası geçmiş ve kaldırılması gereken bir şey olduğunu düşünüyor musunuz? | Evet Hayır |
| 13. | Oldukça sıkıcı bir partiye kolaylıkla canlılık getirebilir misiniz? | Evet Hayır |
| 14. | Kaygılı bir kişi misiniz? | Evet Hayır |
| 15. | Sosyal ortamlarda geri planda kalma eğiliminiz var mıdır? | Evet Hayır |
| 16. | Yaptığınız bir işte hatalar olduğunu bilmeniz sizi endişelendirir mi? | Evet Hayır |
| 17. | Herhangi bir oyunda hiç hile yaptınız mı? | Evet Hayır |
| 18. | Sinirlerinizden şikayetçi misiniz? | Evet Hayır |
| 19. | Hiç başka birini kendi yararınıza kullandınız mı? | Evet Hayır |
| 20. | Başkalarıyla birlikte iken çoğunlukla sessiz misinizdir? | Evet Hayır |
| 21. | Sık sık kendinizi yalnız hisseder misiniz? | Evet Hayır |
| 22. | Toplum kurallarına uymak, kendi bildiğinizi yapmaktan daha mı iyidir? | Evet Hayır |
| 23. | Diğer insanlar sizi çok canlı biri olarak düşünürler mi? | Evet Hayır |
| 24. | Başkasına önerdiğiniz şeyleri kendiniz her zaman uygular mısınız? | Evet Hayır |

# APPENDIX F

## Pozitif Duygu-Durum Negatif Duygu-Durum Ölçeği

Bu ölçek farklı duyguları tanımlayan bir takım sözcükler içermektedir. Son iki hafta nasıl hissettiğinizi düşünüp her maddeyi okuyun. Uygun cevabı her maddenin yanında ayrılan yere (puanları daire içine alarak) işaretleyin. Cevaplarınızı verirken aşağıdaki puanları kullanın.

1. Çok az veya hiç
2. Biraz
3. Ortalama
4. Oldukça
5. Çok fazla

| | | | | | |
|---|---|---|---|---|---|
| 1. İlgili | 1 | 2 | 3 | 4 | 5 |
| 2. Sıkıntılı | 1 | 2 | 3 | 4 | 5 |
| 3. Heyecanlı | 1 | 2 | 3 | 4 | 5 |
| 4. Mutsuz | 1 | 2 | 3 | 4 | 5 |
| 5. Güçlü | 1 | 2 | 3 | 4 | 5 |
| 6. Suçlu | 1 | 2 | 3 | 4 | 5 |
| 7. Ürkmüş | 1 | 2 | 3 | 4 | 5 |
| 8. Düşmanca | 1 | 2 | 3 | 4 | 5 |
| 9. Hevesli | 1 | 2 | 3 | 4 | 5 |
| 10. Gururlu | 1 | 2 | 3 | 4 | 5 |
| 11. Asabi | 1 | 2 | 3 | 4 | 5 |
| 12. Uyanık | 1 | 2 | 3 | 4 | 5 |
| 13. Utanmış | 1 | 2 | 3 | 4 | 5 |
| 14. İlhamlı (yaratıcı düşüncelerle dolu) | 1 | 2 | 3 | 4 | 5 |
| 15. Sinirli | 1 | 2 | 3 | 4 | 5 |
| 16. Kararlı | 1 | 2 | 3 | 4 | 5 |
| 17. Dikkatli | 1 | 2 | 3 | 4 | 5 |
| 18. Tedirgin | 1 | 2 | 3 | 4 | 5 |
| 19. Aktif | 1 | 2 | 3 | 4 | 5 |
| 20. Korkmuş | 1 | 2 | 3 | 4 | 5 |

# APPENDIX G

## Kumar ile İlişkili Düşünceler Ölçeği

Şans/bahis oyunları ve kumar oynama davranışlarınız ile ilgili olarak aşağıdaki ifadeleri okuyup, sizin için ne kadar uygun olduklarını (X) işaretleyiniz. Cevap verirken aşağıdaki puanları kullanın:

1. **kesinlikle katılmıyorum**
2. **büyük ölçüde katılmıyorum**
3. **kısmen katılmıyorum**
4. **ne katılıyorum ne katılmıyorum**
5. **kısmen katılıyorum**
6. **büyük ölçüde katılıyorum**
7. **kesinlikle katılıyorum**

| | |
|---|---|
| 1. Şans/bahis oyunları - kumar oynamak beni daha mutlu ediyor. | **1 2 3 4 5 6 7** |
| 2. Şans/bahis oyunları - kumar oynamadan yapamam. | **1 2 3 4 5 6 7** |
| 3. Dua etmek kazanmama yardımcı oluyor. | **1 2 3 4 5 6 7** |
| 4. Şans/bahis oyunları - kumardaki kayıpların ardından mutlaka bir dizi kazanç da gelecektir. | **1 2 3 4 5 6 7** |
| 5. Kazançlarımın kendi beceri ve yeteneklerim ile ilişkili olduğunu düşünmem, şans/bahis oyunları - kumar oynamaya devam etmeme yol açıyor. | **1 2 3 4 5 6 7** |
| 6. Şans/bahis oyunları - kumar oynamak her şeyin olduğundan daha iyi görünmesini sağlıyor. | **1 2 3 4 5 6 7** |
| 7. O kadar kontrolden çıktım ki şans/bahis oyunları - kumar oynamayı bırakmam çok zor. | **1 2 3 4 5 6 7** |
| 8. Belirli sayılar ve renkler kazanma şansımı arttırmamda yardımcı olabiliyor. | **1 2 3 4 5 6 7** |
| 9. Peş peşe gelen kayıplar, daha sonra kazanmama yardımcı olacak bir deneyim sağlayacaktır. | **1 2 3 4 5 6 7** |
| 10. Kayıplarımın şanssızlık ve olumsuz koşullarla ilişkili olduğunu düşünmem, şans/bahis oyunları - kumar oynamaya devam etmeme yol açıyor. | **1 2 3 4 5 6 7** |
| 11. Şans/bahis oyunları - kumar, geleceği daha aydınlık hale getiriyor. | **1 2 3 4 5 6 7** |
| 12. Şans/bahis oyunları - kumar oynamak için karşı konulmaz bir istek duyuyorum. | **1 2 3 4 5 6 7** |
| 13. Kazanma şansımı arttıracak bazı özel eşyalar/nesneler biriktiririm. | **1 2 3 4 5 6 7** |
| 14. Bir kere kazandım mı, mutlaka tekrar kazanırım. | **1 2 3 4 5 6 7** |

| | |
|---|---|
| 15. Kayıplarımın olasılık hesapları ile ilişkili olduğunu düşünmem, şans/bahis oyunları - kumar oynamaya devam etmeme yol açıyor. | **1 2 3 4 5 6 7** |
| 16. Şans/bahis oyunları - kumar oynamak, üzerimdeki stres ve gerginliğin azalmasına yardımcı oluyor. | **1 2 3 4 5 6 7** |
| 17. Şans/bahis oyunları - kumar oynamayı bırakacak kadar güçlü değilim. | **1 2 3 4 5 6 7** |
| 18. Kazanma şansımı arttıran bazı özel uğur, ritüel ve davranışlarım vardır. | **1 2 3 4 5 6 7** |
| 19. Kendimi şanslı hissettiğim zamanlar var ve sadece o zamanlarda şans/bahis oyunları - kumar oynuyorum. | **1 2 3 4 5 6 7** |
| 20. Son seferde ne kadar para kazandığımı hatırlamak, şans/bahis oyunları - kumar oynamaya devam etmeme neden oluyor. | **1 2 3 4 5 6 7** |
| 21. Hiçbir zaman şans/bahis oyunları - kumar oynamayı bırakamayacağım. | **1 2 3 4 5 6 7** |
| 22. Şans/bahis oyunları - kumarda kazançlarımı kısmen de olsa önceden tahmin edebiliyorum. | **1 2 3 4 5 6 7** |
| 23. Eğer üzerinde bahis - kumar oynadığım sayı, at ya da takımları değiştirip durursam; aynı sayı, at ya da maçlara oynadığım zamanlardan daha az kazanma şansım olur. | **1 2 3 4 5 6 7** |

# APPENDIX H

## Kumar Oynama Motivasyonları Ölçeği

Aşağıdaki ifadeleri okuyup, "**<u>niçin şans/bahis oyunları / kumar oynadığınızı</u>**" düşünüp sizin için ne kadar uygun olduklarını (X) işaretleyin. Cevap verirken aşağıdaki puanları kullanın:

1. **kesinlikle katılmıyorum**
2. **kısmen katılmıyorum**
3. **ne katılıyorum ne katılmıyorum**
4. **kısmen katılıyorum**
5. **kesinlikle katılıyorum**

| **Şans/bahis oyunları / kumar oynuyorum. Çünkü;** | | | | | |
|---|---|---|---|---|---|
| 1. Risk almanın heyecanı hoşuma gidiyor. | **1** | **2** | **3** | **4** | **5** |
| 2. Az para ile çok para kazanabilirim. | **1** | **2** | **3** | **4** | **5** |
| 3. Acı çekiyorum / dertlerim var. | **1** | **2** | **3** | **4** | **5** |
| 4. Başkaları ile birlikte olup sosyalleşiyorum. | **1** | **2** | **3** | **4** | **5** |
| 5. Havamı değiştiriyor. | **1** | **2** | **3** | **4** | **5** |
| 6. Risk almayı eğlenceli buluyorum. | **1** | **2** | **3** | **4** | **5** |
| 7. Kolay yoldan para kazanabilirim. | **1** | **2** | **3** | **4** | **5** |
| 8. Kendimi yalnız hissediyorum / yalnızlıktan kaçıyorum. | **1** | **2** | **3** | **4** | **5** |
| 9. Başkaları ile tanışmak için rahat bir ortam sağlıyor. | **1** | **2** | **3** | **4** | **5** |
| 10. Sıkıcı rutinlerden kaçıyorum. | **1** | **2** | **3** | **4** | **5** |
| 11. Başkaları ile yarışmayı eğlenceli buluyorum. | **1** | **2** | **3** | **4** | **5** |
| 12. Hemen çok para kazanabilirim. | **1** | **2** | **3** | **4** | **5** |
| 13. Kendimi çökkün/üzgün hissediyorum. | **1** | **2** | **3** | **4** | **5** |
| 14. Yeni insanlarla tanışmayı kolaylaştırıyor. | **1** | **2** | **3** | **4** | **5** |
| 15. Yaşamıma enerji katıyor. | **1** | **2** | **3** | **4** | **5** |
| 16. Yoğun duygular yaşamaktan hoşlanıyorum. | **1** | **2** | **3** | **4** | **5** |
| 17. Çok paraya ihtiyacım var. | **1** | **2** | **3** | **4** | **5** |
| 18. Kendimi öfkeli/keyifsiz hissediyorum. | **1** | **2** | **3** | **4** | **5** |
| 19. Oynama niyetim olmasa da diğerleri ile birlikte olmamı sağlıyor. | **1** | **2** | **3** | **4** | **5** |
| 20. Böylelikle boş zamanlarımdan ve oynamaktan zevk alıyorum. | **1** | **2** | **3** | **4** | **5** |
| 21. Belirsizliğin tadını çıkartmak istiyorum. | **1** | **2** | **3** | **4** | **5** |
| 22. Çok büyük paralar kazananlar olduğunu duyuyorum. | **1** | **2** | **3** | **4** | **5** |
| 23. Kendimi gergin/kaygılı hissediyorum. | **1** | **2** | **3** | **4** | **5** |

| | | | | | |
|---|---|---|---|---|---|
| 24. Arkadaşlar ısrar ediyorlar. | **1** | **2** | **3** | **4** | **5** |
| 25. Stresimi azaltıyor. | **1** | **2** | **3** | **4** | **5** |
| 26. Sonuçları tahmin etmeyi eğlenceli buluyorum. | **1** | **2** | **3** | **4** | **5** |
| 27. Maddi sıkıntılarım var ve hiç param yok. | **1** | **2** | **3** | **4** | **5** |
| 28. Kendimi baskı altında hissediyorum / işler iyi gitmiyor. | **1** | **2** | **3** | **4** | **5** |
| 29. Diğerleri ile daha iyi vakit geçiriyorum | **1** | **2** | **3** | **4** | **5** |
| 30. Heyecan duymak ve keyif almak istiyorum. | **1** | **2** | **3** | **4** | **5** |
| 31. Şans/bahis oyunları ve kumar oynamadan yaşamımı değiştiremem | **1** | **2** | **3** | **4** | **5** |
| 32. Beni strese sokan gerçekleri unutuyorum. | **1** | **2** | **3** | **4** | **5** |
| 33. Kazanırken hissettiğim zafer duygusunu yaşamak istiyorum. | **1** | **2** | **3** | **4** | **5** |
| 34. Çok para kazanabilirim. | **1** | **2** | **3** | **4** | **5** |
| 35. Kendimi kolayca başka hiç bir şey düşünmeden kaptırabiliyorum. | **1** | **2** | **3** | **4** | **5** |

# APPENDIX I

## South Oaks Kumar Tarama Testi

**1.** Bugüne kadar aşağıdaki kumar çeşitlerinden hangilerini oynadığınızı belirtiniz. Her kumar çeşidi için üç cevaptan ("hiç", "haftada bir kereden az", veya haftada bir kere veya daha fazla") birini işaretleyiniz.

| | Hiç | Haftada bir kereden az | Haftada bir kere veya daha fazla |
|---|---|---|---|
| At yarışı | ( ) | ( ) | ( ) |
| İddaa | ( ) | ( ) | ( ) |
| Parasına kâğıt oyunları (yanık, poker .gibi) | ( ) | ( ) | ( ) |
| Parasına okey | ( ) | ( ) | ( ) |
| Parasına zar oyunları (barbut ….. gibi) | ( ) | ( ) | ( ) |
| Horoz dövüşü | ( ) | ( ) | ( ) |
| Spor-Toto | ( ) | ( ) | ( ) |
| Sayısal Loto / Şans Topu / On numara / Süper Loto | ( ) | ( ) | ( ) |
| Kazı Kazan / Hemen Kazan | ( ) | ( ) | ( ) |
| Milli Piyango | ( ) | ( ) | ( ) |
| Borsada oynama | ( ) | ( ) | ( ) |
| Casino oyunları | ( ) | ( ) | ( ) |
| Parasına beceri isteyen oyunlar oynama (bilardo …… gibi) | ( ) | ( ) | ( ) |
| Internet'te parasına oyun (Belirtin: .....) | ( ) | ( ) | ( ) |
| Yukarıda belirtilmeyen başka kumar çeşitleri (Lütfen Yazınız:----------) | ( ) | ( ) | ( ) |

**2.** Bugüne kadar bir günde kumara yatırdığınız para en fazla ne kadardır? ---------- TL.

**3.** Hayatınızdaki insanlardan hangilerinin geçmişte veya halen kumar sorunu olduğunu işaretleyiniz:

( ) Baba ( ) Anne ( ) Kardeşler ( ) Büyük anne ve baba ( ) Eş veya partner
( ) Çocuklar ( ) Diğer akrabalar ( ) Arkadaş veya yaşamımdaki önemli başka biri

**4.** Kumar oynadığınızda, kaybettiğiniz parayı yeniden kazanmak için başka bir gün yine kumar oynamaya gider misiniz?

( ) Hiç gitmem ( ) Bazen giderim (kaybettiğim zamanların yarısından azında)
( ) Kaybettiğim çoğu zaman giderim ( ) Her kaybettiğimde giderim

**5.** Gerçekten kazanmıyorken, hatta kaybettiğinizde, hiç kumardan para kazandığınızı iddia ettiğiniz oldu mu?

( ) Asla ( ) Evet, kaybettiğim zamanların yarısından azında ( ) Evet, çoğu zaman

**6.** Bahis ve kumarla ilgili hiç sorununuz olduğunu düşünüyor musunuz?
( ) Hayır ( ) Evet, geçmişte fakat şimdi değil ( ) Evet

**7.** Hiç niyet ettiğinizden fazla kumar oynadığınız oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**8.** Hiç insanların, sizin kabul edip etmediğine bakmaksızın, bahis oynamanızı eleştirdikleri veya size kumar sorununuz olduğunu söyledikleri oldu mu?

**9.** Kumar oynamanızdan veya kumar oynadığınız zaman olanlardan dolayı hiç suçluluk duyduğunuz oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**10.** Bahse girmeyi / kumar oynamayı bırakmak istediğiniz ama bunu yapamayacağınızı düşündüğünüz oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**11.** Bahis kağıtlarını, piyango biletlerini, kumar paralarını, kumar borçlarını veya diğer bahis veya kumar delillerini eşinizden, çocuklarınızdan veya hayatınızdaki diğer önemli insanlardan hiç sakladığınız oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**12.** Birlikte yaşadığınız insanlarla parayı nasıl harcadığınız konusunda hiç tartıştığınız oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**13.** (Eğer yukarıdaki soruyu Evet diye cevaplandırdıysanız) Para konusundaki tartışmaların hiç sizin kumar oynamanız üzerinde yoğunlaştığı oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**14.** Hiç birinden borç alıp kumar yüzünden borcunuzu ödeyemediğiniz oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**15.** Bahis oynama veya kumar yüzünden hiç işinize veya okulunuza geç gittiğiniz ya da gitmediğiniz oldu mu?
( ) Evet, oldu ( ) Hayır, olmadı

**16.** Eğer kumar oynamak veya kumar borçlarını ödemek için borç aldıysanız, kimden veya nereden borç aldınız?

( ) a. Evin parasından ( ) b. Akrabalarınızdan ( ) c. Bankalardan, borç veya kredi kuruluşlarından ( ) d. Kredi kartlarından ( ) e. Tefecilerden ( ) f. Şahsi veya ailevi eşya veya malları satma ( ) g. Arkadaş veya tanıdıklardan
( ) h. Altın, mücevher gibi birikimleri paraya çevirme ( ) j. Bahisçiye borçlanma ( ) k. Kumarhaneye (kahvehane ya da kulüp sahibine) borçlanma

# APPENDIX J

## TEZ FOTOKOPİ İZİN FORMU

**ENSTİTÜ**

Fen Bilimleri Enstitüsü ☐

Sosyal Bilimler Enstitüsü ☒ *

Uygulamalı Matematik Enstitüsü ☐

Enformatik Enstitüsü ☐

Deniz Bilimleri Enstitüsü ☐

**YAZARIN**

Soyadı : ARCAN
Adı : KUNTAY
Bölümü : PSİKOLOJİ
**TEZİN ADI**: Psychological Predictors of Problem Gambling Behaviors

**TEZİN TÜRÜ** : Yüksek Lisans ☐ Doktora ☒ *

1. Tezimin tamamı dünya çapında erişime açılsın ve kaynak gösterilmek şartıyla tezimin bir kısmı veya tamamının fotokopisi alınsın. ☐
2. Tezimin tamamı yalnızca Orta Doğu Teknik Üniversitesi kullancılarının erişimine açılsın. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☒ *
3. Tezim bir (1) yıl süreyle erişime kapalı olsun. (Bu seçenekle tezinizin fotokopisi ya da elektronik kopyası Kütüphane aracılığı ile ODTÜ dışına dağıtılmayacaktır.) ☐

Yazarın imzası: ..... Tarih …….

# APPENDIX K

# CIRRICULUM VITAE

## PERSONAL INFORMATION

Surname, Name: Arcan, Kuntay
Nationality: Turkish (TC)
Date and Place of Birth: 3 April 1975, Çanakkale
Marital Status: Married
Phone: +90 216 626 10 50
Fax: +90 216 626 11 13
email: kuntayarcan@maltepe.edu.tr

## EDUCATION

| Degree | Institution | Year of Graduation |
|---|---|---|
| MS | Maltepe University Psychology, Social Sciences, and Philosophy | 2006 |
| BS | Bosphorous University Psychology | 1998 |
| High school | Kadıköy Anadolu High School, Istanbul | 1993 |

## WORK EXPERIENCE

| Year | Place | Enrollement |
|---|---|---|
| 2006 - Present | Maltepe University, Department of Psychology | Teaching Assistant |
| 2003 - 2006 | Marmara College | School Psychologist |

## FOREIGN LANGUAGES

Advanced English

# APPENDIX L

# TURKISH SUMMARY

## 1. GİRİŞ

Kumar oynama; gerek farklı çeşitleri, gerekse oyuncuların farklılaşan kumar türü tercihleri ile tüm dünyada yaygın olan bir davranıştır. Kumardaki temel beklenti, yatırılanın üzerinde bir değer elde etmektir. Kartlar, zarlar ya da at veya spor müsabakaları üzerine oynanan bahisler gibi bilindik kumar oyunlarının yanında günümüzdeki teknolojik ilerlemeler de internet vasıtası ile yeni kumar türlerini ortaya çıkarmaktadır (Orford, 2005; Petry ve Mallya, 2004). Kumar, kimileri için eğlence içerikli olumlu bir deneyim iken, kimileri için ise farklılaşan süre ve şiddette ortaya çıkan sorunlar ile ilişkilidir (örn. Voldberg, Nysse-Corris, Gerstein, 2006). Raylu ve Oei'ye (2004a) göre kumar ile ilişkili olarak kişinin kontrolden çıkması ve kişisel, kişiler-arası ve sosyal problemler yaşaması durumunda sorunlu kumar oynama söz konusu olmaktadır. Bu çerçevede kumar oynamanın zararlı sonuçlarını ortaya koyan pek çok araştırma bulgusu literatürde bulunmaktadır (örn. Petry ve Armentatano, 1999; Petry ve Mallya, 2004). Ayrıca kumar oynamanın olumsuz sonuçları sadece kumar oynayanlar ile sınırlı kalmayabilmektedir. Örneğin Wiebe, Single ve Falkowski-Ham (2003) yaptıkları araştırmanın bulgularına göre diğerlerinin kumar oynamasından ötürü verdiği borçları tahsil edememek, değerli eşyalarını satmak gibi finansal sorunlar ya da ihmal edilmek, tehdit edilmek gibi

psikolojik sorunlar yaşayanların olduğunu bildirmişlerdir. Kumarın oynayan kişiye ve çevresindekilere verdiği zararlar göz önünde bulundurulduğunda; gerek kumar oynama davranışı, gerekse bu davranışın olumsuz sonuçları, kimi araştırmacının da belirttiği gibi bir halk sağlığı sorunu olarak değerlendirilmelidir (örn. Chou ve Afifi, 2011; Faregh ve Leth-Steenson, 2011).

Kumar oynama literatüründe; kumar oynayanlar ve kumar ile ilişkili yaşanan problemler çerçevesinde farklı terminolojiler kullanılmaktadır. Örneğin Shaffer, Hall ve Vander Bilt (1999) farklı çalışmalarda kumarın en şiddetli düzeyini tanımlamaya yönelik olarak benzer içerikteki kategorilerin 'patolojik', 'muhtemel patolojik', 'aşırı', 'kompulsif' kumar gibi farklı isimler ile anıldığını belirtmişlerdir. 'Patolojik kumar oynama' Amerikan Psikiyatri Birliği'nin (APB) resmi sınıflandırmasında kullanılan teknik bir terimdir (Blaszczynski ve ark., 2004). Patolojik kumar oynama, DSM-IV-TR'de 'Başka Bir Yerde Sınıflandırılmamış Dürtü Denetimi Bozuklukları' başlığı altında sınıflandırılmıştır (APB, 2000). Kumar oynama üzerine aşırı kafa yorma; istediği heyecanı duymak için giderek artan miktarlarda parayla kumar oynama; başarısızlıkla sonuçlanan kumar oynamayı azaltma ya da bırakma çabaları; bu çabalar sırasında huzursuzluk; sorunlardan kaçmak için kumar oynama; kayıplarını kovalama; ne denli kumar oynadığını saklamak için yalan söyleme; kumar oynamak için gereken parayı sağlamak üzere yasa dışı eylemlerde bulunma; ilişki, iş, eğitim ya da meslek ile ilgili sıkıntılar ve kumar oynama nedeniyle içine düştüğü parasal durumdan kurtulmak için para sağlamak üzere başkalarına güvenmek kriterlerinden beş ya da daha fazlasının bulunması APB'ye göre kumar oynayanların patolojik kumar oynama tanısını almalarının koşulunu oluşturmaktadır.

Patolojik kumar oynama tanı kriterleri, madde ile ilişkili bozukluklar tanı kriterlerinden adapte edilerek geliştirilmiştir (Lesieur ve Rosenthal, 1998). Davranışı kontrol edememe, olumsuz sonuçlarına rağmen bağımlı davranışın sürdürülmesi gibi patolojik kumar oynama ve madde ile ilişkili bozukluklar arasında benzerlikler söz konusudur (Black ve Moyer, 1998). Ayrıca iki tanının birlikte sıklıkla görüldüğüne dair de araştırma bulguları bulunmaktadır (örn. Kesler ve ark., 2008; Voldberg ve ark., 2006). Bahsedilen modellemeye karşı görüşler bugüne kadar literatürde öne sürülmüş olsa da (örn. Blaszczynski, 2005; Ledgerwood ve Petry, 2005a; Tavares, Zilberman, el-Guebaly, 2003) kumarın yapılan çalışmalarda 'bağımlılık' olarak isimlendirilmesi ile sıkça karşılaşılmaktadır (örn. Freimuth, 2008; Wood ve Griffiths, 2007). Patolojik kumar oynama tanı kriterleri ile ilişkisi içerisinde kişinin tanı alması için en az kaç semptomunun olması gerektiği bir eleştiri odağıdır (Rosenthal, 2003; Stinchfield, Govoni, Frisch, 2005). Örneğin Petry (2003a) DSM kriterlerinin kumar oynama bozukluğunun en şiddetli formunu yansıtıyor olabileceğini belirtmektedir. Madde ile ilişkili bozukluklar sınıflamasının kötüye kullanımında olduğu gibi patolojik kumar oynama için bir alt kategorinin bulunmaması da bir sorun olarak görünmektedir. Oysa ki yapılan çalışmalarda muhtemel patolojik kumarbazlar ile bir alt kategoride değerlendirilebilecek sorunlu kumarbazların bir çok özelliğinin ortak olduğu (örn. Cox, Kwong, Michaud, Enns, 2000), kumar zararları ile ilişkili olası risklerin her düzeydeki kumarbazlıkta söz konusu olabileceği belirtilmiştir (Currie, Hodgins, Wang, el-Guebaly, Wynne, Chen, 2009). Bu bağlamda ne denli kumar oynadığını saklamak için yalan söylemenin de patolojik kumar oynama ile ilişkili bir semptom olduğu hesaba katıldığında, mevcut resmi sınıflama sisteminin kumar ile

ilişkili sorunları olan bireylerin belirlenmesinde yetersiz olabileceğini düşünmek mümkündür.

APB'nin (1994) patolojik kumar oynamayı belirlemeye yönelik olarak tanımladığı kriterler ve bu kriterlerin en az kaçının kişide bulunması gerektiğine dair mevcut sınıflama sistemine yönelik olarak yukarıda özetlenen eleştirilere rağmen, yapılan çalışmalar patolojik kumar oynamanın diğer psikiyatrik tanılara kıyasla hiç de azımsanmayacak ölçüde yaygın olduğunu ortaya oymaktadır. Örneğin, patolojik kumarbazların oranı İsviçre'de %1.1 (Bondolfi ve ark., 2008), Hong Kong'da %1.8 (Wong ve Ernest, 2003), Brezilya'da %1 (Tavares ve ark., 2010) olarak bildirilmiştir. Kore gibi kimi ülkelerde ise bu oranlar yüzde 3 ve 4'lere çıkmaktadır (Lee ve ark., 1999). Türkiye'de bu anlamda patolojik kumar oynamanın yaygınlığını belirlemek üzere yapılmış bir çalışmaya literatürde rastlanmamıştır. Ancak, Cumhurbaşkanlığı Devlet Denetleme Kurulu'nun (DDK) Türkiye'de yaptığı ve 2009 yılında yayımladığı bir çalışma raporunda bir önceki yıl kumar oynadığını ifade edenlerin %3.5'i paraları olmasa dahi borç alıp kumar oynayacaklarını ifade etmiştir. Tek bir soruya verilen yanıt üzerinden patolojik düzeyde kumar oynayan kişileri belirleyebilmek mümkün olmasa da raporda sözü edilen bu yanıtın oranına bakarak Türkiye'deki patolojik kumarbazların oranının, yukarıda sözü edilen yaygınlık oranlarından çok düşük olmayabileceğini speküle etmek hatalı olmayacaktır.

Patolojik olarak sınıflanacak düzeyde kumar oynayanların yukarıda sözü edilen yaygınlık oranları patolojik olarak sınıflanacak düzeyde kumar oynamayanlar ya da hiç kumar oynamayanların oranlarına kıyasla çok düşüktür. Ancak, bu oranlar bu durumdan muzdarip bireylerin reel sayıları ile düşünüldüğünde ve bu kişilerin reel

sayılarına yakın çevrelerindekilere verdikleri zararlar da eklendiğinde, durum sayılar ile ifade edilenlerden daha da ciddileşmektedir. Ayrıca Freimuth'un (2008) da belirttiği gibi daha az şiddetli vakalar yukarıda verilen oranlara dahil değildir. Wiebe ve arkadaşlarının (2003a) 448 katılımcı ile yaptıkları bir yıllık takip çalışması her düzeydeki kumar oyuncusunun %10'nun daha problemli bir üst düzeye zaman içerisinde geçtiklerini ortaya koymuştur. Bunun anlamı, yaşamlarının herhangi bir döneminde patolojik kumarbaz tanısı almayan kumar oyuncularının gelecekte bu tanıyı almalarının olası olduğudur. Tüm bu bilgiler ışığında patolojik düzeyde olsun olmasın kumar oynayanlar ile olası riskler, sürecin patolojikleşmesi, yatkınlık faktörleri gibi değişkenler üzerinden çalışmalar yürütülmesinin gereği açıktır.

Her ne kadar bir taraftan son yıllarda kumar oynayanların özelliklerini belirlemeye yönelik olarak yürütülen çalışmaların sayısında artış olduğu bildirilse de (Johansson ve ark., 2009), diğer taraftan da kumar literatürünün henüz enfantil düzeyde olduğu ifade edilmektedir (Milosevic ve Ledgerwood, 2010; Raylu ve Oei, 2004a). Currie ve arkadaşları (2009) kumar oyuncuları ile ilgili yürütülen araştırmaların değişim ve ilerleme içinde olduğunu ifade ederlerken, Johansson ve arkadaşları (2009) önleme çalışmalarındaki gecikmeleri ampirik araştırma bulgularının eksikliklerine bağlamaktadırlar. Kumar oynayanlar ile ilgili yürütülmüş araştırmalar ve bulgularının ifade edilen yetersizliğinin yanı sıra, ilişkili çoğu verinin Batı'dan geliyor olması da bir başka problem alanıdır. Raylu ve Oei (2004a) sorunlu kumar oyunculuğunun ortaya çıkışı ve devamını sağlayan faktörlerin anlaşılmasında ve tedavinin belirlenmesinde olası kültürel faktörlerin belirlenmesinin önemine işaret etmişlerdir. Bu tarafı ile Türkiye örnekleminde kumar oynayanlar ile yapılacak

araştırmalara gerek evrensel gerekse yerel katkıları göz önünde bulundurulduğunda ihtiyaç duyulmaktadır. Zira bugüne kadar Türk örneklemlerinde sınırlı sayıda yapılmış çalışmalar (DDK, 2009; Duvarcı ve Varan, 2000; Duvarcı ve Varan, 2001; Karlı, 2008), Türkiye'de kumar oynayan bireylerin batıdakilere kıyasla daha az sorun yaşadıklarını ya da sorun yaşamadıklarını düşündürecek herhangi bir bulgu ortaya koymamışlardır.

Kumar oynayan kişilerin katılımıyla günümüze kadar yapılan çalışmaları, içeriklerine bakarak birkaç başlıkta gözden geçirmek mümkündür. Kumar oynama davranışlarındaki ortak yönleri belirlemeye yönelik çalışmalarda, kumar oynama faaliyetlerinin erişilebilirliği, kumar oyuncularının demografik özellikleri ve patolojik düzeyde kumar oynama ile beraber görülen eş-tanılar incelenmiştir. Kumar oynama davranışlarının psikolojik yordayıcıları olarak isimlendirilebilecek ikinci ana başlık altında ise ağırlıklı olarak kişilik, bilişsel ve motivasyonel faktörler araştırılmıştır. Kumar oynama sıklığı, kumara yatırılan para, toplamda oynan kumar çeşitleri gibi içeriğe sahip kumar katılımı ise üçüncü ana başlık olarak dikkat çekmektedir.

Kumar oynama davranışlarındaki ortak yönleri belirlemeye yönelik yürütülen çalışmalarda, kumar oynama faaliyetlerinin erişilebilirliğinin kumar oynama davranışını artıracağı yönündeki beklenti kimi araştırmalara ilham kaynağı olmuştur. Freimuth'un (2008) belirttiği gibi bağımlılık için bağımlı davranışın erişilebilir olması gerekmektedir. Yasal kumar oynama olanakların artması ile birlikte problemli / patolojik kumar oyuncularının arttığını ortaya koyan araştırma bulguları olduğu gibi (örn. Ladouceur ve ark., 1999), bu ilişkileri desteklemeyen araştırma sonuçları da

literatürde bulunmaktadır (örn. Bondolfi ve ark., 2008). Kumar oynama davranışlarındaki ortak yönleri belirlemeye yönelik olarak yürütülen çalışmalarda, kumar oyuncularının demografik özellikleri, üzerinde sıklıkla araştırma yapılan bir başka alt alandır. Bu çerçevede yapılan çalışmalarda, problemli / patolojik kumar oynama ile genç yaş (örn. Bondolfi ve ark., 2008; Scherrer ve ark., 2007); erken yaşta kumar oynamaya başlama (örn. Kessler ve ark., 2008; Voldberg ve ark., 2001); erkek cinsiyeti (örn. Chou ve Afifi, 2011; Voldberg ve ark., 2006); işsiz olma (örn. Bondolfi ve ark., 2000); düşük eğitim seviyesi (örn. el-Guebaly ve ark., 2006) gibi değişkenler ilişkili bulunmuştur. Johansson ve arkadaşları (2009) ilgili literatürü gözden geçirdikleri çalışmalarının neticesinde erkek cinsiyeti ve genç yaşın patolojik kumar oynama için iyi belirlenmiş risk faktörleri olduğunu; işsizlik ve düşük akademik başarı gibi etkenlerin patolojik kumar oynama için muhtemel risk faktörleri olduğunu ifade etmişlerdir. Anılan araştırmacılar; eğitim seviyesi, evlilik durumu ve gelir düzeyinin, patolojik kumar oynama ile ilişkisine dair çelişkili araştırma bulgularına ulaşıldığından ötürü sözü edilen değişkenlerden belirlenmiş risk faktörleri olarak söz etmenin doğru olmayacağını belirtmişlerdir. Diğer taraftan paragrafın başında belirtilen kumar oynama davranışlarındaki ortak yönleri belirlemeye yönelik çalışmalardaki patolojik kumar oynayanların aldıkları eş-tanılar/semptomlar incelendiğinde dürtü kontrol bozuklukları (örn. Black ve Moyer; Grant ve Kim, 2003), depresif bozukluk / depresif semptomlar (örn. Stuhldreher, Stuhldreher, Forrest, 2007; Voldberg ve ark., 2006); madde ve alkol kullanımı ile ilişkili bozukluklar (örn. el-Guebaly ve ark., 2006; Kessler ve ark., 2008) ve kişilik bozukluklarının (örn. Kruedelbach ve ark., 2006; Nordin ve Nylander, 2007) öne

çıktığı görülmektedir. Patolojik düzeyde kumar oynamaya eşlik eden semptomlar ya da eş-tanıların belirlenmesine yönelik olarak yapılan çalışmalar önem taşımakla birlikte, Kim ve arkadaşlarının (2006) belirttiği gibi bu tanılardan primer ya da sekonder olanların da ayrıca belirlenmesi seçilecek tedavi yöntemine olası etkilerinden ötürü önemlidir.

Kumar oynayan kişilerin katılımıyla günümüze kadar yapılan çalışmalarda bu kişiler ile ilgili psikolojik etkenlerin araştırılması da önemli bir yer tutmaktadır. Bu çerçevede günümüze kadar yürütülen çalışmalarda, sorunlu / patolojik düzeyde kumar oynayan bireylerin kişilik özellikleri, kumar ile ilişkili hatalı içeriğe sahip kognisyonları ve kumar oynamaya yönelik motivasyonları sıklıkla araştırmalara konu olmuştur. Bu çalışmalar neticesinde ortaya konan bulgularda sorunlu / patolojik düzeyde kumar oynama ile özellikle nörotisizm kişilik özelliklerinin ilişkili olduğu belirlenmiştir (örn. Blaszczynski, Buhrich, McConaghy, 1985; Kaare, Mottus, Konstabel, 2009). Bu ilişki, nörotik kişilik boyutunun genel olarak psikopatoloji ile ilişkili olduğu bulgusunu (Malouff ve ark., 2005) destekler niteliktedir. Sorunlu / patolojik düzeyde kumar oynamanın, nörotik kişilik özelliklerine görece daha fazla sahip olan bireylerde daha yaygın olduğu sonucuna ulaşan araştırmaların yanı sıra, kumar ile ilişkili hatalı kognisyonlara daha fazla sahip bireylerde de sorunlu / patolojik düzeyde kumar oynamanın daha yaygın olduğunu ortaya koyan çalışmalar bulunmaktadır (örn. Joukhador, Maccallum, Blaszczynski, 2003; Raylu ve Oei, 2004b). Sözü edilen çalışma bulgularını destekleyecek biçimde kumar oynama yoğunluğunun, sayıca artan bu türden kognisyonlar ile beraber artığını ortaya koyan çalışmalara literatürde rastlanmaktadır (örn. Delfabbro ve Winefield, 2000; Miller ve

Currie, 2008). Bu çerçevede özellikle kumar oynama şikayetleri nedeni ile bilişsel terapi alan bireylerin kumar ile ilişkili kognisyonlarının terapide hedef alınması önerilmektedir (örn. Tavares ve ark., 2003). Bu paragrafta gözden geçirilen psikolojik etkenlerden üzerinde durulması gereken bir diğer etken de bireylerin kumar ile ilişkili motivasyonlarıdır. Her ne kadar yapılan çalışmalarda bu motivasyonların tam olarak neyi ölçeceği, içeriklerinin nasıl belirleneceği ya da nasıl isimlendirilecekleri konusunda bir uzlaşı olduğu izlenimi edinilmese de sorunlu / patolojik kumar oynama davranışları ile tutarlı bir biçimde ilişkili olarak özellikle kaçınma motivasyonu öne çıkmaktadır (örn. Wood ve Griffiths; Stewart ve ark., 2008). Bireylerin kaçınma çabalarının alkol ve/veya madde kullanımı (örn. Kuntsche ve ark., 2005; McNally ve ark., 2003; Simons, Correia, Carey, 2000) ya da tıkınırcasına yeme (örn. Stewart ve ark., 2006) gibi diğer patolojik durumlarla da bir arada görülüyor olması, kaçınma motivasyonu ve psikopatoloji arasındaki genel bir bağ olabileceğini işaret etmektedir. Görünen odur ki kişinin olumsuz duygu, düşünce ya da anılardan kaçınma arzusu, alkol ya da kumar gibi adaptif olmayan yollarla karşılanmaya çalışıldığında, kişinin yaşamında yeni zorluklar ortaya çıkmaktadır.

Kumar oynama sıklığı, kumara yatırılan para, toplamda oynan kumar çeşitleri gibi içeriğe sahip kumar katılımı da sorunlu / patolojik düzeyde kumar oynama ile ilişkisi içinde günümüze kadar yapılmış olan çalışmalarda önemli bir yere sahiptir. Her ne kadar burada söz edildiği anlamda kumar katılımı boyutu patolojik kumar oynama resmi kriterlerinden değilse de (APB, 2000) ikisinin birbirinden bağımsız olarak düşünülebilmesi pek mümkün gözükmemektedir. Zira bu çerçevede yapılan çalışmalarda sık kumar oynanmasının (örn. el-Guebaly ve ark., 2006; Matthews ve

ark., 2009), kumar için görece fazla para harcanmasının (örn. Currie ve ark., 2009; Petry ve Mallya, 2004), farklı türde kumar oyunlarının oynamasının (örn. Kessler ve ark., 2008; Welte ve ark., 2004) daha fazla problemle karşılaşılması ile ilişkili olduğu ortaya konmuştur. Hatta Faregh ve Leth-Steenson (2011) yaptıkları araştırma sonucunda elde ettikleri bulguları, kumar ile ilişkili yaşanan problemlerin kumar oynama sıklığı sürekliliğinde değiştiği şeklinde değerlendirmişlerdir. Her ne kadar burada kısaca özetlenen araştırma bulgularında gözüktüğü gibi katılım ve kumardan kaynaklanan sorunlar yakından ilişkili gözükse de sözü edilen katılımın kumar ile ilişkili diğer değişkenler ile nasıl bir etkileşim içerisinde kumarın şiddetini artırdığını anlamaya yönelik olarak geliştirilmiş ya da test edilmiş modeller literatürde yok denecek kadar azdır. Bu eksikliğin kısmen sebebi Rodgers, Caldwell ve Butterworth'in (2009) belirttiği gibi araştırmacıların bu türden ölçümlerin geçerliğine duyduğu güvensizlik olabilir. Araştırmalara katılan bireyler kumar katılımlarını kumar oynamanın sosyal kabul edilebilirliği düşük olduğundan ötürü gizlemek istiyor olabilirler. Diğer taraftan Petry'nin (2009) ifade ettiği gibi katılım ile kumar oynamaktan kaynaklanan sorunlar arasındaki ilişki, kişilerin yaşam koşulları ya da finansal durumlarından etkileniyor olabilir. Bu tarafları ile değerlendirildiğinde bugüne kadar katılım ile ilgili toplanmış veriler kumar oynamaktan kaynaklanan sorunlar ile ilişkili gözükmekle beraber, diğer değişkenlerin de olası etkilerini göz önünde bulundurarak bu ilişkinin yapısını ortaya koyacak türden kapsamlı modeller henüz yeterince geliştirilmemiş ve bunların istatistiksel geçerliliği test edilmemiştir.

Tüm bu bilgiler ışığında, bu çalışmanın iki ana hedef alanının olduğundan söz edilebilir. Bu iki hedef alanından ilkine bugüne kadar Türk örnekleminde kumar

oynayanların özelliklerini belirlemeye yönelik olarak yapılmış araştırmaların neredeyse yok denecek kadar az olması zemin hazırlamıştır. Bu eksikliğin, bilimsel araştırmaların yapılması için gerekli olan kumar ile ilişkili farklı değişkenlerin değerlendirilmesini sağlayacak standart ölçeklerin Türkçede olmamasından kaynaklanabileceği düşünülmüştür. Bu gerekçe ile bu çalışmada kumar ile ilişkili düşüncelerin ve motivasyonların ölçülmesine yönelik olarak geliştirilmiş iki ölçeğin uyarlamasının yapılması hedeflenmiştir. Belirtilen bu amaç çerçevesinde beklenen katkı, Türkiye örnekleminde kumar oynayan katılımcılar ile bilimsel çalışma yapmak konusundaki ilginin arttırılmasıdır. Bu çalışmanın ikinci hedef alanı ise kumar ile ilişkili olduğu saptanmış farklı değişkenlerin aynı katılımcılar için Türkiye örnekleminde değerlendirilmesinin yapılması olarak belirlenmiştir. Bu bölümde derlenen kumar sorunları ile ilişkili olduğu belirlenmiş değişkenler farklı çalışmalarda farklı katılımcılardan toplanmış veriler ışığında ortaya konmuştur. Bu çalışmada ise kişilik, duygu, motivasyon, kognisyon, katılım gibi kumar ile ilişkili değişkenlerin bilgisi aynı katılımcılardan toplanmıştır. Bunun kumar oynama şiddeti ve kumardan kaynaklanan zararlar bağlamında gerek değişkenler-arası karşılaştırmaları yapmak, gerekse mümkün olduğunca fazla değişkenin kumar üzerindeki etkilerini kontrol ederek değerlendirme yapmak açısından literatüre katkı sağlayacağı düşünülmüştür. Bu amaçlar doğrultusunda, spor müsabakaları ve at yarışları sonuçları üzerine bahis oynayan, 18 yaş ve üzeri, 357 erkek katılımcı çalışmanın örneklemini oluşturmuştur.

## 2. YÖNTEM

**Katılımcılar:** Araştırmanın örneklemini at yarışı ve spor müsabakaları üzerine bahis oynanan bayilerde bahis oynayan, 18 yaş ve üzeri, erkek, 357 katılımcı oluşturmuştur. Yaş ortalaması 36 olarak hesaplanan katılımcıların, %60'ı bekar ve %40'ı da evli olduklarını ifade etmişlerdir. Örneklem grubunun önemli bir çoğunluğunu üniversite öğrencileri ve mezunlarından oluşan katılımcılar oluşturmuşlardır (%39). Ayrıca katılımcıların yine önemli bir çoğunluğu eşleri ve varsa çocukları ile beraber yaşadıklarını ifade etmişlerdir (41%). Örneklem grubunda kişisel gelir düzeyi ile ilgili yöneltilen soruya sıklıkla 1000-2000 arası lira yanıtı alınmıştır (%40).

**Ölçüm araçları:** Katılımcılara kişisel bilgi formunun yanı sıra araştırma kapsamında verilen ölçekler kısaca aşağıda tanıtılmıştır.

*Kumar ile İlgili Tutum/Düşünce/Davranış Bilgi Formu:* Araştırmacı tarafından geliştirilmiş bu formda, katılımcıların kumar oynamayı bırakmakla ilgili niyet ve davranışlarının olup olmadığının yanı sıra kumar oynamanın katılımcıların yaşamlarında aile ve arkadaşlık ilişkileri, iş hayatı, maddi ve duygusal durumlarına etkileri öğrenilmeye çalışılmıştır. Ayrıca katılımcıların kumar katılım verileri (sıklık, harcanan para, vb.) yine bu form aracılığıyla edinilmiştir.

*Eysenck Kişilik Anketi-Revize Edilmiş ve Kısaltılmış Form (EKA-RK):* 24 maddeden oluşan ölçeğin sorularına 'evet' ya da 'hayır' yanıtlarından birisinin verilmesi beklenmektedir (Francis ve ark., 1992). Her biri altışar maddelik psikotisizm, nörotisizm, dışadönüklük, yalan alt boyutları olan ölçeğin Türkçe formu psikometrik açıdan geçerli ve güvenilir özelliklere sahiptir (Karancı ve ark., 2007).

*Pozitif ve Negatif Duygu-Durum Ölçeği:* Watson ve arkadaşları (1988) tarafından duygu durumu ölçmek için geliştirilmiş ölçek 20 maddeden oluşmaktadır. 5'li Likert tipi olan ölçek 10 olumlu ve 10 olumsuz duygu durumunu belirlemektedir. Tük örneklemine adaptasyonu Gençöz (2000) tarafından yapılmıştır.

*Kumar ile İlişkili Düşünceler Ölçeği (KDÖ):* Raylu ve Oei (2004b) tarafından geliştirilen ölçek, kumar oynamayı durduramama (inability to stop gambling), kontrol illüzyonu (illusion of control), kumar beklentileri (gambling expectancies), tahmini kontrol (predictive control) ve yoruma dayalı önyargı (interpretive bias) düşünceleri alt boyutlarından oluşmaktadır. Ölçek için gerek toplam, gerekse alt boyutları puanı hesaplanabilmektedir. 7'li Likert tipi olan ölçek 23 maddeden oluşmaktadır. Ölçek bugüne kadar farklı araştırmalarda kullanılmıştır (örn. Emond ve Marmurek; Oei, Lin ve Raylu, 2007). Bu çalışmada Türkçeye uyarlanan ölçeğin psikometrik özellikleri sonraki bölümde detaylandırılmıştır.

*Kumar Oynama Motivasyonları Ölçeği (KOM):* Lee, Chae, Lee ve Kim (2007) tarafından geliştirilen ölçek sosyalleşme (socialization), eğlenme (amusement), kaçınma (avoidance), heyecan (excitement) ve para kazanma (monetary) motivasyonları alt boyutlarından oluşmaktadır. 5'li Likert tipi olan ölçek 35 maddeden oluşmaktadır. Bu çalışmada Türkçeye uyarlanan ölçeğin psikometrik özellikleri sonraki bölümde detaylandırılmıştır.

*South Oaks Kumar Tarama Testi Türkçe Formu (SOKT):* Lesieur ve Blume (1987) tarafından geliştirilen ölçeğin Türkçeye uyarlaması Duvarcı ve Varan (2001) tarafından gerçekleştirilmiştir. Ölçek kumar oynama şiddetini ölçmeye yönelik maddelerden oluşmakta olup, bugüne kadar bir çok araştırmada kullanılmıştır (örn.

Cox ve ark., 2000; Matthews ve ark., 2009; Petry, 2003b). Ölçeğin orijinal formunda 20 üzerinden 5 ve yukarı puan alanlar muhtemel patolojik düzeyde kumar oynayanlar olarak sınıflandırılmaktadır (Lesieur ve Blume, 1987). Türk örnekleminde yapılan çalışmada ise çalışmadığı düşünülen 3 maddenin yerine 2 madde uyarlanmış, toplam 19 puan üzerinden 8 ve yukarı puan alanların muhtemel patolojik düzeyde kumar oynayanlar olarak sınıflandırılmasının uygun olacağı belirtilmiştir (Duvarcı ve Varan, 2001).

**İşlemler:** Yukarıda sözü edilen iki ölçeğin uyarlanmasında, ölçekleri geliştiren araştırmacılardan izin alınmasının ardından çeviri –geri çeviri yöntemi uygulanmış, Türkçe formlar için dilbilgisi ve anlam yönünden uzman görüşüne başvurulmuş, bunun ardından formların son haline karar verilmiştir. Çalışmanın yapılması için etik kuruldan izin alınmıştır. Verilerin İstanbul'daki at yarışı ve spor müsabakaları sonuçları üzerine bahis oynanan bayilerde katılımcılardan toplanmasında, bu işlem için eğitilmiş Psikoloji Bölümü III. sınıf öğrencileri gönüllü olarak çalışmışlardır.

## 3. TEMEL BULGULAR ve TARTIŞMA

Bu çalışmanın temel amaçlarından birisini, Türk örnekleminde kumar oynayan bireylerin özelliklerinin ve bu bireylerin karşılaştıkları sorunların tanınmasına araştırmacılar gösterdiği sınırlı ilgiyi artıracağı düşünülen kumar ile ilişkili iki ölçeğin Türkçeye uyarlanması oluşturmuştur. Bu amaçla Kumar ile İlişkili Düşünceler Ölçeği (KDÖ) ve Kumar Oynama Motivasyonları Ölçeği (KOM) Türkçeye çevrilmiş ve ölçekler psikometrik özellikleri bakımından incelenmişlerdir.

Yapılan faktör analizi sonucunda, KDÖ Türkçe formunun faktör yapısının orijinal forma kıyasla farklılaştığı görülmüş, ikinci aşama olarak orijinal faktör yapısına göre Türkçe formda faktörlerin iç tutarlılık katsayıları hesaplanmıştır. Bu hesaplama neticesinde KDÖ Türkçe formu faktörlerinin iç tutarlılık katsayıları göreceli olarak düşük bulunmuştur. Ancak ölçeğin toplam iç tutarlık katsayısının (.83) tatmin edici düzeyde olduğu düşünülmüştür. Bu bulgu ile beraber ölçeğin orijinal formunu geliştiren Raylu ve Oei'nin (2004) özellikle kumar oynama şiddetinin yordanmasında ölçek toplam skorunun değerlendirilmesinin daha uygun olacağı önerisi dikkate alındığında, çalışma kapsamındaki analizlerde KDÖ'nün toplam skorunun kullanılmasına karar verilmiştir. Katılımcıların KDÖ'de aldıkları puanlar, SOKT ile ölçülen kumar oynama şiddeti puanları yüksek ve düşük olanlar arasında karşılaştırmış; sonuçta kumar oynama şiddeti puanları daha yüksek olanların düşük olanlara kıyasla daha fazla kumar ile ilişkili hatalı denebilecek düşüncelere sahip oldukları bulunmuştur. Ayrıca yine katılımcıların KDÖ puanlarının nörotisizm ve kumar için ayrılan süre puanları ile anlamlı düzeyde korele bulunması, ölçeğin geçerliliğini desteklemiştir. Özetlenen bu bilgiler ışığında KDÖ'nün bahis oynayan, 18 yaş ve üzeri, erkek Türkiye örnekleminde geçerli ve güvenilir psikometrik özellikler gösterdiğini değerlendirmek mümkün olmuştur. KDÖ'nün faktör analizi için yukarıda özetlenen işlemler KOM için de yinelenmiştir. KOM'un Türkçe formunun faktör yapısı orijinal formun faktör yapısından az da olsa farklılaşmış, ancak orijinal faktör yapısına göre hesaplanmış gerek faktör gerekse toplam ölçek iç tutarlılık katsayıları tatmin edici düzeyde bulunmuştur. *'Arkadaşlar ısrar ediyorlar.'* maddesinin psikometrik özelliklerinin diğer maddelere kıyasla düşük olduğu

bulunmuş, madde içeriği dikkate alındığında bahis oynamak için kart, okey oyunlarında olduğu gibi başkalarının varlığına zorunlu olarak ihtiyaç duyulmayacağı düşüncesi ile bu madde kalan analizlerden çıkarılmıştır. Katılımcılardan kumar oynama şiddeti daha yüksek olanların düşük olanlara kıyasla daha fazla kaçınma, eğlenme, heyecan ve para kazanma motivasyonuna sahip oldukları bulunmuş; sosyalleşme de dahil olmak üzere tüm motivasyon faktörlerinin kumar için ayrılan süre ile anlamlı düzeyde korele olduğu sonucuna ulaşılmıştır. Bu bilgiler ışığında KDÖ'nün 18 yaş ve üzeri, erkek, bahis oynayan Türk örnekleminde geçerli ve güvenilir psikometrik özellikler gösterdiğini değerlendirmek mümkün olmuştur.

Katılımcıların SOKT puanları incelendiğinde, her 10 katılımcıdan en az birinin muhtemel patolojik düzeyde kumar oynayan olarak sınıflandırılabileceği sonucu ortaya çıkmıştır. Her ne kadar örneklem grubunun temsil edici özellikleri sınırlaysa da bu bulgu, Türk örnekleminde kumar oynayanlar ile araştırma yapılmasının gereğini ortaya koyması bakımından önemli bulunmuştur. Zira SOKT'nin Türkçe versiyonuna (Duvarcı ve Varan, 2001) göre 8 puan ve üzeri alan örneklemin %11.6'sı muhtemel patolojik düzeyde kumar oynayan olarak sınıflandırılabilecekken bu oran SOKT'nin orijinal versiyonuna (Lesieur ve Blume, 1987) göre 5 puan ve üzeri alanlar için hesaplandığında %33.1'e çıkmıştır. Düzenli bahis oynadıkları belirlenen katılımcıların göreceli olarak düşük puan alanları bile (SOKT < 3) kumar oynama davranışlarını kontrol etme sorunları (*'hiç niyet ettiğinizden fazla kumar oynadığınız oldu mu?'*), kişiler-arası sorunlar (*'hiç insanların bahis oynamanızı eleştirdikleri veya size kumar sorununuz olduğunu söyledikleri oldu mu?'*) ve kişisel problemler (*'kumar oynamanızdan veya kumar*

*oynadığınız zaman olanlardan dolayı hiç suçluluk duyduğunuz oldu mu?'*) yaşadıklarını düşündürecek yanıtlar vermişlerdir. Örneklemin seçkisiz olarak belirlenmediğinin altını çizmekler beraber, bu çalışmanın düzenli kumar oynayan katılımcılarının haftada yaklaşık ortalama 10 saat kumar ile ilişkili işlere vakit ayırdıkları ve haftada yaklaşık ortalama 122 lira kumar için para harcadıkları dikkate alındığında, Türk örnekleminde kumar oynayanlar ile araştırma yapılmasının gereği açıktır.

Bu araştırmanın sonuçlarına göre SOKT ile değerlendirilen katılımcıların kumar oynama şiddeti puanları evli ya da bekâr olmaları, eğitim seviyeleri ya da yaşlarına göre değişmemiştir. Bu bulgular ışığında Türk örnekleminde kumar oynama şiddetinin sözü edilen demografik özellikler ile ilişkili olmadığı sonucuna varılmamış, bu ilişkilerin temsil edici özelliği daha yüksek olan örneklemlerdeki gelecek araştırmalarda incelenmesinin daha uygun olacağı düşünülmüştür. Diğer taraftan alkol kullandıklarını ifade eden katılımcıların kumar için harcadıklarını söyledikleri para miktarı alkol kullanmadıklarını ifade eden katılımcılara kıyasla anlamlı olarak daha yüksek bulunmuş, ancak katılımcıların kişisel ve ev gelirleri dikkate alınarak yapılan karşılaştırmada bu anlamlı fark ortadan kalkmıştır. Ayrıca yine söz konusu iki grubun kumar oynama şiddeti puanları farklılaşmamıştır. Aslında literatürde alkol kullanımının sorunlu kumar oynama davranışı için bir risk faktörü olduğunu ortaya koyan bulgular bulunmaktadır (örn. Bondolfi ve ark., 2001; el-Guebaly ve ark., 2006; Kruedelbach ve ark., 2006). Böylesi bir ilişki bulgusuna bu araştırmada ulaşılamamasının muhtemel bir nedeni katılımcılardan alkol kullanım sıklığı, miktarı, geçmişi ile ilgili bilgi alınması yerine sadece alkol kullanıp

kullanmadıklarının sorulması olmuştur. Test bataryasının yoğun olması ve buna bağlı olarak tamamlanmasının zaman alacak olmasından ötürü bu tür verilerin detayının toplanması bu araştırma kapsamında sınırlı olmuştur. Diğer taraftan yine sıklık, miktar ve geçmişine dair katılımcılardan bilgi alınmamış olmakla birlikte sigara içtiklerini ifade eden katılımcıların gerek kumar oynama şiddeti puanları gerekse kumar katılım indekslerinde (kumar için ayrılan zaman, kumar oynama sıklığı, kumara harcanan para) aldıkları puanlar sigara içmeyenlere kıyasla daha yüksek bulunmuştur. Bu bulgu, sigara içme ve sorunlu kumar oynama arasında ilişki olduğunu ortaya koymuş pek çok geçmiş araştırma sonucunu desteklemiştir (örn. McGrath ve Barrett, 2009; Petry ve Oncken, 2002; Petry, Stinson, Grant, 2005; Rodda, Brown, Phillips, 2004).

Bu çalışmada yer alan katılımcıların, kumar katılımları kumar oynama sıklığı, kumar için ayrılan süre, toplamda oynanan kumar çeşidi sayısı, geçmiş kumar oynama süresi ve kumara harcanan para verileri ile değerlendirilmiştir. Ayrıca katılımcıların kumar için harcadıkları para, kişisel ve ev gelirleri göz önünde bulundurularak da hesaplanmıştır. Yapılan karşılaştırmalı analiz sonucunda muhtemel patolojik düzeyde kumar oynayan katılımcıların kumar katılımları geçmiş kumar oynama süresi ve toplamda oynanan kumar çeşidi sayısı dışındaki tüm ölçümlerde patolojik düzeyde kumar oynamayan katılımcılara kıyasla daha yüksek bulunmuştur. Bu çalışmaya dair söz konusu bulgu sorunlu kumar oynama ile kumar katılımı arasında geçmiş araştırmalarca ortaya konmuş sonuçları desteklemiştir (örn. Clarke ve Clarkson, 2009; el-Guebaly ve ark., 2006; Faregh ve Leth-Steenson, 2011). Ayrıca kumar katılımı, yapılan hiyerarşik çoklu regresyon analizleri

sonuçlarına göre, gerek sorunlu kumar oynama davranışı gerekse kumar ile ilişkili zarar ile kişilik, duygu-durum, kumar motivasyonları ve kumar ile ilişkili düşüncelerin etkileri kontrol ediltikten sonra dahi ilişkili bulunmuştur. Bu bulgu kumar katılımının birçok ilişkili değişkenin kontrol edilmesinden sonra bile kumar oynama şiddeti ve kumar zararları ile ilişkili bulunması bakımından önemlidir. Bu tarafı ile kumar katılımının 'sorumlu kumar oynama / oynatma' çerçevesinde yasal düzenlemeler ile kontrol edilmesinin, kumar oynayanların ve bu bireylerin çevrelerindekilerin korunmasına yönelik olarak atılması gereken bir adım olduğu açıktır. Sorunlu kumar oynanmasının önlenmesine yönelik olarak yürütülecek bilgilendirme/eğitim çalışmaları ya da bireysel olarak sorunlu kumar oynayanların terapisinin yanı sıra bahsedilen türden bir kontrol mekanizmasının yasa düzeyinde de geliştirilmesinin pek çok yararının olacağından söz etmek mümkündür.

Bu çalışma kapsamında sorunlu kumar oynama davranışları ve kumardan kaynaklanan zararın kişilik boyutları, duygu-durum, kumar ile ilişkili kognisyonlar ve motivasyonlar ile ilişkileri de incelenmiştir. Muhtemel patolojik düzeyde kumar oynayan katılımcıların patolojik düzeyde kumar oynamayan katılımcılara kıyasla nörotisizm, olumsuz duygu-durum, kumar ile ilişkili düşünceler ve kaçınma, para kazanma ve heyecan motivasyonlarında anlamlı düzeyde daha yüksek; olumlu duygu-durumda anlamlı düzeyde daha düşük puan aldıkları bulunmuştur. Ayrıca yapılan hiyerarşik çoklu regresyon analizleri ve lojistik regresyon analizi sonuçları da söz edilen değişkenlerin birbirlerinin etkilerini kontrol ettikten sonra da olumlu duygu-durum dışında gerek sorunlu kumar oynama davranışları gerekse kumar oynamanın olumsuz sonuçları ile ilişkili olduğunu ortaya koymuştur. Bu araştırma ile

ortaya konan bu ilişkiler geçmiş araştırma bulgularını destekler niteliktedir. Sorunlu kumar oynamanın nörotisizm (örn. Bagby ve ark., 2007), olumsuz duygu-durum (örn. Matthews ve ark., 2009), kumar ile ilişkili düşünceler (örn. Raylu ve Oei, 2004) ve özellikle kaçınma motivasyonu (örn. Stewart ve ark., 2008) ile ilişkili olduğu daha önce yapılmış pek çok araştırmada ortaya konmuştur. Bu araştırmanın diğer araştırmalara kıyasla bir artısı, sözü edilen bulgulara ulaşırken diğer araştırmalara dahil edilmemiş değişkenlerin de etkilerinin bu çalışmada kontrol edilmesi olmuştur. Örnek vermek gerekirse kumardan kaynaklanan zararı yordayan değişkenlerin belirlenmesi amacıyla yapılan hiyerarşik çoklu regresyon analizde kaçınma motivasyonu, ilk üç basamakta kumar oynama şiddeti, kişilik, duygu-durum değişkenleri kontrol edildikten sonra dahi zarar ile anlamlı düzeyde ilişkili bulunmuştur. Bu tarafı ile bu araştırmada görece zengin denilebilecek sayıda değişkenin varlığı ve bu değişkenlerin çoklu regresyon analizlerinde bir arada kullanılmış olması, çoğu araştırmaya kıyasla olabildiğince kontrol edilememiş faktörlerin bulgular üzerindeki etkisini azaltmıştır. Toparlamak gerekirse sorunlu kumar oynama davranışları ve kumardan kaynaklanan zararın bu araştırmanın bulgularına göre olumsuz duygu-durum, nörotisizm kişilik özellikleri, kumar ile ilişkili hatalı düşünceler ve özellikle kişinin mevcut sorunlarından kaçınma arzusu ile ilişkili olduğunu söylemek mümkündür.

Bu çalışmada şimdiye kadar özetlenen bulguların yanı sıra öne çıkan bulgulardan birisi de kumar ile ilgili işlere ayrılan ortalama süre ile ölçülen kumar katılımının, kumar ile ilişkili düşünceler ve sosyalleşme dışındaki kumar motivasyonları ile kumar oynama şiddeti arasındaki ilişkideki istatistiksel olarak

anlamlı bulunan aracı değişken rolü olmuştur. Bir başka deyişle katılımcıların kumar ile ilişkili ifade ettikleri düşünceleri ve motivasyonlarındaki artış, kumar katılımını artırmış; kumara ayrılan süre ile ölçülen artan kumar katılımı da örneklem grubundaki katılımcıların kumar oynamalarının SOKT ile ölçülen içerikte şiddetlenmesi ile sonuçlanmıştır. Bu bulgu, görece soyut içeriğe sahip kumar ile ilişkili düşünceler ve motivasyonların artan görece somut kumar katılımı ile kumar oynama davranışlarının bireylerin yaşantılarında daha sorunlu hale geldiğini ortaya koyması bakımından önemli bulunmuştur. Bu bulgunun, başka çalışmalar ile de desteklenmesi koşuluyla pratikteki anlamı, bir taraftan terapi ortamında geçerlilik ve işlevsellikleri sorgulanacak kumar ile ilişkili düşüncelerin düzenlenmesinin, bireylerin kumar katılımlarını sınırlandıracağıdır. Diğer taraftan eğlenme ve heyecan motivasyonlarının kumar dışında daha uygun / daha az riskli araçlarla karşılanmasının gündeme alınmasının, kaçınma motivasyonu yerine etkili problem çözme becerilerinin geliştirilmesine odaklanılmasının, para kazanmak için kumar oynamanın gerçekçi sonuçlarının ya da olası risklerinin değerlendirilmesinin yine bireylerin kumar katılımlarını sınırlandıracağını beklemek sözü edilen bu araştırma bulgusu doğrultusunda uygun olacaktır.

Bu çalışmanın bulguları içerisinde tartışılmasının uygun olacağı bir başka sonuç da nörotisizm, olumsuz duygu-durum, kaçınma ve para kazanma motivasyonları ve kumar oynama şiddetinin aynı kapsamlı modelde test edildiği analizdir. Kişilik, duygu-durum ve motivasyon değişkenlerinin kumar oynama şiddetini yordamaya yönelik olarak aynı modelde test edildiği bir başka çalışma raporuna bu çalışmanın araştırmacısı tarafından ilgili literatürde rastlanmamıştır.

Kişilik ve motivasyonun alkol kullanım sorunlarını yordamaya yönelik yürütülmüş çalışmalardan esinlenerek teorik altyapısı oluşturulan bu çalışmadaki model istatistiksek düzeyde tatmin edici sonuçlar vermiştir. Yapılan analiz sonucunda, nörotisizm kaçınma motivasyonunu, olumsuz duygu-durum hem kaçınma hem de para kazanma motivasyonlarını yordamış; kaçınma ve para kazanma motivasyonları da sorunlu kumar oynama davranışları ile ilişkili bulunmuştur. Nörotisizm kişilik özellikleri ve kaçınma motivasyonunun alkol kullanımı üzerindeki etkisini ortaya koymuş çalışmalar literatürde bulunmaktadır (örn. Stewart ve Devine, 2000; Stewart ve ark., 2001). Bu çalışmada nörotisizm kişilik özellikleri ile beraber olumsuz duygu-durum da modele eklenmiş ve her ikisinin de ayrı ayrı kaçınma motivasyonuna etkisinin olabileceği istatistiksel olara ortaya konmuştur. Sözü edilen modelde yer alan bir başka değişken de para kazanma motivasyonu olmuştur. Türk örneklemlerinde bugüne kadar kumar ile ilgili yapılmış sınırlı sayıdaki araştırma bulgularına göre, kumar oynama nedenleri listesinde para kazanma arzusu önemli bir yer tutmaktadır (örn. GIB, 2009; Duvarcı ve Varan, 2000). Bu çalışmada test edilen modele para kazanma motivasyonu eklenirken özellikle olumsuz duygu-durumu görece yüksek olan katılımcıların kumar ile elde edebileceklerini düşündükleri ‘kolay’ ve ‘çok’ parayı olumsuz duygu-durumlarına sanki bir fayda sağlayacakmış gibi değerlendirebilecekleri hipotez edilmiştir. Başka bir deyişle daha fazla paranın her kumar oyuncusu için olmasa da en azından kimileri için daha az duygusal olumsuzluk beklentisi ile ilişkili olarak değerlendirilebileceği düşünülmüştür. Sözü edilen bulgu ışığında özellikle kumardan para kazanma arzusu görece daha yüksek olan bireylerin gelecek çalışmalarda kumardan kazanacakları paradan açık - örtük ya

da direkt – dolaylı olarak neler umdukları bilgisinin alınıp değerlendirilmesinin önemli olabileceği düşünülmüştür.

## 4. KATKILAR, SINIRLILIKLAR ve ÖNERİLER

Bu çalışma Türkiye'de kumar oynayan katılımcılar ile bu denli kapsamda gerçekleştirilmiş ilk araştırmadır. Gerek katılımcı sayısı, gerek katılımcıların düzenli kumar oynayan kişiler olması ve gerekse de kullanılan standardizasyonu yapılmış ölçeklerden bu çalışmadaki sayıda faydalanılmış olması bu araştırmanın kapsamını Türkiye'de bugüne kadar bu bağlamda daha önceden yapılmış çok sınırlı sayıdaki araştırmaya kıyasla oldukça genişletmiştir. Ayrıca bu çalışma ile Türkiye'deki kumar oynayan kişilerin kumara yönelik düşüncelerini ve motivasyonlarını değerlendirmeye yönelik olarak uyarlanmış iki ölçek bu alanda araştırma yapmayı planlayan araştırmacıların uluslararası literatüre katkı sağlamalarını daha olanaklı hale getirecektir. Araştırma sonucunda örneklem grubunun kumar katılımları ve kumar oynama şiddeti puanları incelendiğinde Türkiye'de kumar oynayanların, kumar ile ilişkili sorunlarının ve kumardan kaynaklandığını ifade ettikleri zararlarının, bu konuda görece çok daha fazla araştırma yapılmış ülkelere kıyasla daha az olabileceğine dair hiçbir izlenim elde edilmemiştir. Bu tarafı ile bu çalışma ile ortaya konan bir önemli belirleme de Türkiye'de kumar oynayan kişiler ile gerek mevcut sorunların saptanması, gerek risk faktörlerin anlaşılması, gerekse de sorunların önlenmesine yönelik olarak bir kamuoyu gündemi oluşturacak biçimde araştırmaların yapılmasının açık gereğidir. Aksi halde, Türk örnekleminde böyle bir sorun olmadığı yanılgısı söz konusu olabilecektir.

Mevcut çalışmanın yukarıda özetlenmeye çalışılan ulusal düzeydeki katkılarının yanı sıra uluslararası düzeyde de katkılarının olabileceğinden kısaca söz etmek gerekirse, bu araştırmada çoğu araştırmaya kıyasla katılımcılardan çok daha fazla değişkene dair veri toplanmıştır. Aynı katılımcılardan bu zenginlikte veri toplanması kumar sorunları ya da kumardan kaynaklanan zarar ile ilişkili değişkenlerin karşılaştırmalı etkilerini belirlemek açısından bir avantaj sağlamıştır. Diğer taraftan yine bu sözü edilen zenginlik pek çok araştırmaya kıyasla bu çalışmada kontrol edilemeyen değişkenlerin etkisini görece azaltmıştır. Bu çalışmada test edilen ve istatistiksel olarak doğrulanan modeller, görece soyut içerikteki düşünce ve motivasyonların artan görece somut kumar katılımı ile beraber kumar sorunlarını fazlalaştırdığını ortaya koymuştur. Ayrıca yine bu çalışmada test edilen ve istatistiksel olarak doğrulanan bir başka modelde ise kişilik, duygu-durum ve motivasyon değişkenlerinin kumar sorunlarını nasıl yordayabileceği ortaya konmuştur. Sözü edilen bu son iki bulgunun uluslararası literatürde gelecekte yapılacak çalışmalar ile desteklenmesi halinde sorunlu kumar oynama bağlamında risk faktörleri ve devam ettirici faktörlerin anlaşılması ve bunlara bağlı önleme ve tedavi programlarının daha sağlam bilimsel zemin üzerine inşa edilebilmesi anlamında yararlı olabileceği beklenmektedir.

Öte yandan bu çalışmanın bazı sınırlılıklarının olduğunu belirtmek gerekmektedir. Bu sınırlılıklardan ilkini örneklem grubu üzerinden özetlemek mümkündür. Bu çalışmanın katılımcılarının Türkiye'deki 18 yaş ve üzeri bireyleri ya da 18 yaş ve üzeri kumar oynayan bireyleri temsil edebilme özelliği seçkisiz örneklem yöntemi kullanılmadığından ötürü sınırlıdır. Gelecekte Türkiye'de

yapılacak çalışmalarda farklı kumar çeşidi oyuncularını, 18 yaş altındakileri, kadınları araştırma örneklem gruplarına dahil etmenin gereği açıktır. Diğer taraftan bu çalışmada kullanılan öz-bildirime dayalı veri toplama yönteminden kaynaklanan bazı sınırlılıklarını olduğunu belirtmek de mümkündür. Özellikle ne kadar kumar oynadığını gizlemek amacı ile yalan söylemesi mümkün olan kumar oyuncuları ile yürütülen çalışmalarda veri toplama sürecine aile yakınları ya da arkadaşlar gibi farklı veri kaynaklarının dahil edilmesi uygun olacaktır. Son olarak bu çalışmada kullanılan ölçüm araçlarının psikometrik özelliklerine dair bazı sınırlılıklardan söz etmek gerekmektedir. Örnek vermek gerekirse, bu çalışma ile uyarlaması yapılan ölçeklerin test tekrar-test verileri bulunmamaktadır. Diğer taraftan kumardan kaynaklanan zararın belirlenmesine yönelik olarak bu çalışma için araştırmacının geliştirdiği soruların özellikle geçerliliğini ölçebilecek mevcut envanterler Türkçede bulunmadığından ötürü sözü edilen zarara yönelik geliştirilen soruların geçerliliğine dair bilgi sınırlıdır. Bu bölümde kısaca değinilmeye çalışılan bu çalışmaya ait sınırlılıklar bir taraftan bulguların temkinli değerlendirilmesini gerektirmektedir. Diğer taraftan bu sınırlılıklar, farklı özellikteki temsil ediciliği görece yüksek örneklem gruplarında ya da geçerlilik ve güvenilirliği bağlamında daha uygun psikometrik özelliklere sahip ölçüm araçları ya da ölçüm yöntemleri kullanılarak planlanacak gelecek çalışmalara esin kaynağı olabilmelidir.