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Lifetime of Prevalence and Risk Factors of Problem and Pathologic Gambling in North Cyprus

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Abstract:

In this article the results of the national survey of adult gambling behavior in North Cyprus in 2012 is presented. The aim of this study is to investigate the characteristics of adults' participation in gambling, and to determine the prevalence of 'problem and pathological gambling' in NC. The population of this study was formed from all the people living permanently in North Cyprus, speaking Turkish, and within the age group 18-65. Household interviews were conducted with 966 people. To obtain data, a 30 item questionnaire prepared by the researchers and a Turkish version of the Revised South Oaks Gambling Screen (SOGS) were used. The lifetime prevalence of participating at least once in any of the 17 gambling activities investigated in the survey was 74.8%. 3.5% of the respondents scored as lifetime probable pathological gamblers and 9.2% as probable problem gamblers. The participants also mentioned that their friends, relatives, parents and even their children are getting used to gambling. Risk factors for becoming probable problem and pathological gamblers include being male, being in the 19-28 age group, having high education level, having a job and being born in Cyprus. This study shows that the gambling problem is gradually increasing in NC and that the Northern Cypriots are developing into a specific and identifiable gambling population. Socio-cultural factors have a similar impact on gambling behavior in North Cyprus to other parts of the world.

Keywords: Gambling, Pathological Gambling, Prevalence, Problem Gambling.

Introduction

Gambling, including such activities as betting, bingo, card playing and cockfighting has long held a significant place in Cypriot life. During the 1950s and 60s while the state lottery, horse-racing and football betting were the only licensed types of gambling in Cyprus, Turkish Cypriots were running a small number of casinos, stylized as private clubs (Scott et al. 2013). Since the military intervention of Turkey in 1974, Cyprus has been divided into two by the so-called “Green Line” dividing the Turkish Cypriot North and Greek Cypriot South (Dodd 1988). The Turkish part - North Cyprus (NC) remains internationally unrecognized and exposed to political and economic embargos. Tourism is the most important contributor to the NC economy, and within this, the casino industry plays an important role (Alipour and Vughaingmeh 2010). While there were only four small premises in 1991 (Scott 2001), with the prohibition of gambling in Turkey in 1997 (Duvarcı and Varan 2000), the casino industry in NC has expanded exponentially. After 1997, a large number of Turkish casinos moved immediately to NC (Scott 2003) and within 15 years the casino sector had grown and internationalized, with over 20 casinos opening on the casino resort model adapted from Las Vegas (Scott 2001; Scott et al. 2013). Most of the gamblers come from Turkey and the Greek part of Cyprus where casino gambling is illegal (Scott and Asikoglu 2001; Alipour and Vughaingmeh 2010). Casinos are prohibited to NC citizens, but betting offices, the state lotteries of NC and Turkey, sport lotto, sports toto, instant scratch cards, and numerical lotto for the financing of sport clubs are accepted as legal forms of gambling.

There are psychological, social, and biological adverse effects of gambling for some individuals (Abbott et al. 2004; Ashley and Boehlke 2012). In general, people experiencing difficulties with gambling can be grouped into two categories: (1) Problem gamblers and, (2) Pathological or compulsive gamblers (Ashley and Boehlke 2012). Though pathological gambling was defined in the medical literature in the early 1800's, (Harvard Mental Health Letter 2010) it was officially recognized in 1980 and classified as an impulse control disorder in DSM-III (American Psychiatric Association 1980). According to DSM-IV-TR, to be diagnosed with pathological gambling, an individual must meet at least five of 10 criteria (American Psychiatric Association 1994). These include a preoccupation with gambling; the need to gamble with an increasing amount of money; repeated unsuccessful efforts to stop gambling; restless or irritable behavior when attempting to cut down on gambling; and gambling as a way of escaping from problems. In DSM-V (American Psychiatric Association 2010), pathological gambling has been renamed as “gambling disorder” and moved to the same category as that used for alcohol and drug use disorders. The threshold for a diagnosis of gambling disorder has also been decreased from five to four symptoms. “Illegal acts” criterion has been eliminated.

Examination of problem gambling prevalence studies show that gambling is a severe problem effecting approximately 1% of the world's population (Wiebe and Volberg 2007). In general, the lowest prevalence rates of problem gambling tend to occur in Europe, with intermediate rates in North America and Australia, and the highest rates in Asia (Williams et al. 2012). The ratio of pathological gambling in high prevalence Asian countries like Hong Kong, Singapore and Macau is about 2% (Fong and Orozio 2005; Wong and So 2007) . In the first prevalence study conducted in NC in 2007, the ratio of pathological gambling was estimated as 2.2% (Çakıcı 2012). The ratio of problem gambling is usually higher among adolescents, indigenous minority groups, and among migrant communities (Derevensky and Gupta 2004; Westermeyer et al. 2005).

Over the past decade, the nature of gambling in NC has been changing, largely due to the introduction of the casinos, but also to the increasing availability of other forms of gambling such as betting and internet gambling.

Besides growing interest in the social impact of these new forms of gambling on the Northern Cypriot population, there has, to date, been little reliable information available about gambling behavior. This study is a follow-up study of the one conducted in 2007 and the aim is to investigate the characteristics of adults' participation in gambling, and to determine the prevalence of 'problem and pathological gambling' in NC.

Methods

Sampling

The population of this study is all those people living permanently in NC who speak Turkish, and within the age group 18-65. Household interviews were conducted with 966 people. To achieve a representative sample of adult population, random multi-staged, stratified sampling quota was used. Different strata used were age (18-29, 30-39, 40-49, 50-65), gender (male/female), urban/rural, and geographical region (Lekosa, Magusa, Girne, Guzelyurt and Iskele) and they were determined as represented on the last national statistics and demographic survey carried out on 4th December 2011 (Census of Population 2011). These geographical regions are separated into quarters in the urban areas and into villages in the rural areas, and research contact points were chosen from these at random.

Fieldwork

The study was carried out between April and May 2012 in NC. Interviews were conducted in 16 quarters, 17 villages and 5 city centers. At the contact points in urban areas, interviewers started from a street determined at random in the office, and for rural areas interviewers started from the centre of the village and went north, east, south and west. Interviewers covered squares, starting at the lowest number on the right-hand side of a street and going to every third house. At the first turn they would turn right and would continue contacting households on the right hand side until they completed the square. Then they would then cross to the next square and continue in the same way. This enabled a uniformity of 'pacing', thereby eliminating interviewer bias. The research covered every third household. In order to choose the person to participate in the research, once the household chosen to participate in the survey was contacted, a male-female quota was taken into consideration and the female in the first house and the male in the second house were chosen. Care was taken to keep within the age quotas. If there was more than one candidate for the research, the one whose birthday was last was chosen. Twenty-two interviewers were involved and in order to minimize interviewer bias, each conducted about forty five interviews.

Questionnaire

For data collection, a 30 item questionnaire prepared by the researcher, and the Turkish version of the Revised South Oaks Gambling Screen (SOGS) were used. SOGS was developed by Lesieur and Blume (1987) and a Turkish reliability and validity study conducted by Duvarcı and Varan (2001).

South Oaks Gambling Screen (SOGS)

The original form of SOGS consists of 44 questions. The SOGS index is constructed from 20 questions which are scored as 1 or 0. 'Probable pathological gambling' is indicated by a score of 5 or more on the SOGS and 'problem gambling' is indicated by a score of 3 or 4 on the SOGS (Volberg and Steadman 1988). The

Turkish version of the SOGS consists of seventeen of the 20 original SOGS items and two appendant culturally relevant items for which the cut off point for 'probable pathological gambling' is a score of 8 (Duvarcı and Varan 2001).

At the beginning of the interview, the respondents were informed that the purpose of the study was to investigate gambling behavior and the information obtained would be used only for scientific purposes without mentioning their personal data. The questionnaire and Turkish version of SOGS were administered to the volunteers accepted to take part at the study by the interviewer. Written informed consent was taken from each participant. Each interview took approximately 40 minutes.

Statistical analysis

Statistical analysis was made with SPSS 21 for Windows. Chi-square analysis was used to compare different characteristics of the groups. Significance levels of 0.05 were adopted. Logistic regression was used to determine the associations between the risk factors (independent variables) and problem and possible pathological gambling behaviors (dependent variables). Independent variables were gender, age, length of time married, living status, education, children, employment and country of birth.

Results

Gambling participation

The lifetime prevalence of participating at least once in any of the 17 gambling activities included in the survey was 74.8%. The highest participation was for the lottery games like the national lottery, instant scratch games and numerical lotto. The national lottery had a 5.8% increase in 2012 compared to the study conducted in 2007 (Çakıcı 2012). Whereas the numerical lotto was the second most widely recorded gambling activity in 2007, instant scratch games, with the highest increase of 9.7% replaced numerical lotto in 2012. Among the games which are played once a week or more, casino games, the national lottery and internet gambling are found to have the highest increase. Traditional card games played at the cafes still preserve their presence. Among the games which are played less than once a week instant scratch cards, sports toto-sports lotto, card games and gambling on the internet are the gambling activities which show the highest increase in ratio during these five years. The comparative distribution of gambling games between 2007 and 2012 is shown in Table 1.

The participants who gamble less than once a week preferred the casino primarily, followed by the betting office. The participants who stated that they gambled once a week or more preferred the betting office to the casino. There is a considerable increase in the ratio of playing casino games compared to 2007 data (Çakıcı 2012). Gambling on the internet is also becoming more prevalent. Participants admit to having borrowed money from credit cards (9.8%), common family income (8.6%), friends (8.8%), banks and credit institutions (3.7%), casinos (2.8%) and moneylenders (0.5%) to subsidize their habit. The participants also mention that more others in their social circle, such as close friends (42.6%), relatives (22.6%), father (12.8%) siblings (11.2%), partners (6.3%) and even their children (3.7%) have taken up gambling.

There are characteristic patterns of gambling participation in NC. For example, men in NC (n=328, 66.8%) are more likely than women (n=185, 42.2%) to gamble on horse and dog races ($\chi^2=134.41$, $p<0.001$), card games ($\chi^2=50.204$, $p<0.001$), okay games ($\chi^2=134.41$, $p<0.001$), dice games ($\chi^2=18.101$, $p<0.001$), cockfighting ($\chi^2=23.475$, $p<0.001$), sports toto/sports lotto ($\chi^2=142.635$, $p<0.001$), numerical lotto ($\chi^2=22.277$, $p=0.000$), and

skill games (e.g. billiards) ($\chi^2=13.057$, $p<0.001$). These games are mostly played at betting offices and traditional coffee shops where men mostly go. On the other hand, no difference remains between men and women regarding casino games, gambling games on the internet, instant scratch cards, national lottery and speculations. Whereas the Cyprus-born residents mostly prefer to bet on horse and dog races, cockfighting, instant scratch cards and gambling games on the internet, Turkey-born residents are more likely to gamble particularly on card games, okay games and skill games. However, Cyprus-born residents (15.8%) experience more gambling problems than Turkey-born residents (8.4%) ($\chi^2=5.090$, $p<0.05$).

Pathological gambling

The ratio of lifetime probable pathological gamblers determined with SOGS score in the sample was 3.5%. If this ratio is used for the whole population of NC, (Census of Population 2011) among 294,396 people, 10,303 (3.5%) NC residents aged 18–65 can be considered lifetime probable pathological gamblers. 9.2% of the participants claimed to have experienced a problem related to gambling and this means that about 27,084 people might have experienced a gambling related problem.

As indicated in other studies, ‘problem’ gambler group was combined with ‘probable pathological’ gambler group as they show more similar characteristics than ‘non-problem’ gambler group (Volberg and Steadman 1988; Volberg et al. 2001). The distribution of demographic characteristics of ‘non-problem people’ (scoring less than 3 points on SOGS) and ‘problem and pathologic gamblers’ (scoring 3 or more points on SOGS) was compared for both 2007 and 2012 results (Table 2).

The risk factors for problem gambling are shown at table 4. Being male, being between the ages of 18 and 29, having high education, having an occupation and being born in Cyprus rather than Turkey increase the risk of experiencing gambling related problems (Table 3).

Discussion

The study shows that gambling is becoming more prevalent in NC and that pathological gambling is also increasing. Compared to the 2007 data (Çakıcı 2012), pathological gambling has increased from 2.2% to 3.5%, problem and pathological gambling have increased from 11.9% to 12.7%, and having participated in any form of gambling has increased from 55% to 79.8%. These findings indicate that pathological gambling in NC is more widespread than in the high prevalence countries of Asia (Wong and So 2003; Fong and Orozio 2005). Extremely high prevalence rates similar to those identified in NC have only been found among three specific ethnic groups (Table 4). These include the Puerto Ricans in Puerto Rico (Volberg and Vales 1998), Maoris in New Zealand (Abbott and Volberg 1996) and Native Americans in North Dakota (Volberg and Silver 1993). Volberg and Vales (1998) state that the common characteristics of these three groups are a history of colonization and related economic exploitation, and remaining relatively disadvantaged in socio-economic terms, low levels of formal education and high unemployment. NC has common characteristics with these groups as it was an English colony for 82 years, has been subject to economic embargos as an unrecognized country and is dependent therefore on Turkey for support.

Compared to the 2007 survey (Çakıcı 2012) there is now more access to gambling venues in NC and more participation in gambling activities. In parallel with this, problem and pathological gambling have also increased. The number of betting offices was 70 in 2007, and reached 75 in 2012. The betting offices are socially accepted

and as they are almost the only leisure place in the villages, they have become a place for low-income people to gamble on a frequent basis. Studies show that as gambling becomes more socially acceptable and accessible, then adults in the general population start to gamble in increasing numbers (Shaffer et al. 1999). Whereas in 2007 there were 20 Casinos, 315 tables and 3612 machines, by 2012 the number of casinos had increased to 24, the number of tables to 430, and the machines to 4212. Studies show that the increased number of casinos and especially the increased intensity of electronic gaming machines increase the problem gambling ratio (Storer et al. 2009). It might be concluded that the increasing availability of gambling opportunities may result with an increase in prevalence of gambling related problems in the general population (Griffiths 1999). However, a contradictory example to this argument might be Macau which was a Portuguese colony in the past and tried to solve its economic problems by becoming a gambling city. The gambling prevalence in Macau is lower than Hong Kong which shares similar a cultural and political background with Macau but is not a gambling city (Wong and So 2003; Fong and Orozio 2005). Orford (2005) suggests that exposure to gambling and gambling related harms is not in fact similar to the patterns identified for alcohol, tobacco and other similar substances. The relation between gambling exposure and gambling harm is not linear and in fact there is adaptation to potential risk and harms through time (Shaffer 2005).

The increasing trend of problem and pathological gambling in NC indicates that this adaptation process has not occurred yet. The first reason for the delay in the adaptation process may be that there is still an ongoing increase in the number of casinos and betting offices, and that the possibilities presented by these places continue to make their attractiveness grow. The options provided by the casinos are also very attractive for native people who do not have a good socioeconomic status and have low prospects for social activity. Free food, alcohol and cigarettes are given to the players at the casinos. The casinos also offer their customers package deals where gambling and prostitution are combined (Güven-Lisaniler et al. 2005). The second reason may be related to the perception of the casinos as negative and alien by native people. Adaptation to what is perceived to be 'bad' cannot be easily accomplished. The majority of the casinos in NC are owned by foreigners and foreign labor is employed. Casinos are thus perceived as an alien economic agent that run contrary to the interests of Turkish Cypriots and cause numerous problems (Alipour and Vughaingmeh 2010). The third, connected, reason may be that casinos, unlike betting offices are legally forbidden to NC citizens. Adaptation to what is forbidden is not expected. However, the forbidden nature of activities like gambling, drugs, alcohol and smoking make people - especially adolescents - more prone to engage in them (Netemeyer et al. 1998). Furthermore, the prohibition against casinos has not been actively applied in NC, and hence has not been successful in preventing the increase in gambling. As the NC community is small and family relations are collectivist and traditional (Zorba 2012), the gamblers are being stigmatized. Stigmatization is especially observed in small communities and the shame becomes a barrier to the search for treatment and this too contributes to the high prevalence of gambling (Tse et al. 2004). The fourth reason for high problem gambling prevalence in NC may be the lack of prevention programs to increase awareness, help cope with gambling problems and provide effective treatment facilities for people suffering from this problem. Effective public health campaigns to raise awareness of the risks of problem gambling and the availability of treatment services have the potential to counteract the problem and thus gambling prevalence may remain static or decline over time (Abbott et al. 2004). In addition, as noted above, a fifth reason, which also seems to underpin the others, is the traditional gambling culture. Scott (2003), for

example, shows how coffee shops and casinos may interact and how the existing local gambling culture in Cyprus and the rapidly growing global casino industry may be mutually promoting each other.

When we examine the literature about pathological and problem gambling, being younger than 29 years old, male, unmarried, unemployed, an immigrant, and low education level are found as risk factors (Volberg 1988; Volberg 1994; Volberg et al. 2001; Potenza et al. 2001). In this study, being younger than 29 years old, being male, unmarried, and living alone are found to be risk factors similar to those described in the literature. However, although the literature identifies being an immigrant as a major risk factor, there is actually a higher rate of problem gambling among Cyprus-born residents rather than Turkey born immigrants. In this regard it is worth underlining that native Turkish Cypriots have become a minority group in NC as their population has decreased to about 140 thousand due to emigration to countries such as the UK, Australia and Canada as a result of the inter-communal conflict. Since Turkey's intervention in 1974, the number of immigrants from Turkey has outgrown the number of Turkish Cypriots (Hatay 2007). The social and political relations between Turkish Cypriots and immigrants from Turkey are strained, with Turkish Cypriots expressing the feeling that they have been invaded and culturally and physically annihilated (Navaro-Yashin 2006). Experiences of loss of culture, changes in social norms, breakdown of families and loss of social or economic status can be considered the reasons for transition from social gambling to problem gambling (Dyall et al. 2002). The contradiction between the relationship of gambling and migration in NC when compared to the extant literature may be related to an acculturation process which has caused the native culture-Turkish Cypriots to start to show minority characteristics, and this change in community structure may be related to increased gambling among Turkish Cypriots.

New research should be conducted in regions like NC where there is a rapid increase in gambling to understand the impacts of gambling on vulnerable, at-risk populations. Specific communities with a high gambling prevalence have common characteristics but each community also has some characteristics unique to itself. Problem gambling among NC people cannot be explained solely as an individual problem but should be understood within its social context. This article reveals that socio-cultural aspects need to be taken into consideration in the struggle against problem gambling in NC. To have a better understanding of the social impacts of gambling in NC, further studies especially on acculturation are needed. Effective prevention strategies and programs can be developed based on these research findings to increase awareness. Treatment and rehabilitation centers should be established. Public campaigns need to be implemented which promote services among the NC population in order that NC gamblers are encouraged to seek help at an earlier stage. A multidisciplinary approach is required to achieve effective public health intervention and social policies to prevent gambling related problems in NC.

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9 the respondents scored as lifetime probable pathological gamblers and 9.2% as probable problem gamblers. The
10 participants also mentioned that their friends, relatives, parents and even their children are getting used to
11 gambling. Risk factors for becoming probable problem and pathological gamblers include being male, being in
12 the 19-28 age group, having high education level, having a job and being born in Cyprus. This study shows that
13 the gambling problem is gradually increasing in NC and that the Northern Cypriots are developing into a specific
14 and identifiable gambling population. Socio-cultural factors have a similar impact on gambling behavior in
15 North Cyprus to other parts of the world.
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Keywords: Gambling, Pathological Gambling, Prevalence, Problem Gambling.
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Introduction

1 Gambling, including such activities as betting, bingo, card playing and cockfighting has long held a
2 significant place in Cypriot life. During the 1950s and 60s while the state lottery, horse-racing and football
3 betting were the only licensed types of gambling in Cyprus, Turkish Cypriots were running a small number of
4 casinos, stylized as private clubs (Scott et al. 2013). Since the military intervention of Turkey in 1974, Cyprus
5 has been divided into two by the so-called “Green Line” dividing the Turkish Cypriot North and Greek Cypriot
6 South (Dodd 1988). The Turkish part - North Cyprus (NC) remains internationally unrecognized and exposed to
7 political and economic embargos. Tourism is the most important contributor to the NC economy, and within this,
8 the casino industry plays an important role (Alipour and Vughaingmeh 2010). While there were only four small
9 premises in 1991 (Scott 2001), with the prohibition of gambling in Turkey in 1997 (Duvarcı and Varan 2000),
10 the casino industry in NC has expanded exponentially. After 1997, a large number of Turkish casinos moved
11 immediately to NC (Scott 2003) and within 15 years the casino sector had grown and internationalized, with
12 over 20 casinos opening on the casino resort model adapted from Las Vegas (Scott 2001; Scott et al. 2013). Most
13 of the gamblers come from Turkey and the Greek part of Cyprus where casino gambling is illegal (Scott and
14 Asikoglu 2001; Alipour and Vughaingmeh 2010). Casinos are prohibited to NC citizens, but betting offices, the
15 state lotteries of NC and Turkey, sport lotto, sports toto, instant scratch cards, and numerical lotto for the
16 financing of sport clubs are accepted as legal forms of gambling.

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There are psychological, social, and biological adverse effects of gambling for some individuals (Abbott et al.
2004; Ashley and Boehlke 2012). In general, people experiencing difficulties with gambling can be grouped into
two categories: (1) Problem gamblers and, (2) Pathological or compulsive gamblers (Ashley and Boehlke 2012).
Though pathological gambling was defined in the medical literature in the early 1800’s, (Harvard Mental Health
Letter 2010) it was officially recognized in 1980 and classified as an impulse control disorder in DSM-III
(American Psychiatric Association 1980). According to DSM-IV-TR, to be diagnosed with pathological
gambling, an individual must meet at least five of 10 criteria (American Psychiatric Association 1994). These
include a preoccupation with gambling; the need to gamble with an increasing amount of money; repeated
unsuccessful efforts to stop gambling; restless or irritable behavior when attempting to cut down on gambling;
and gambling as a way of escaping from problems. In DSM-V (American Psychiatric Association 2010),
pathological gambling has been renamed as “gambling disorder” and moved to the same category as that used
for alcohol and drug use disorders. The threshold for a diagnosis of gambling disorder has also been decreased
from five to four symptoms. “Illegal acts” criterion has been eliminated.

Examination of problem gambling prevalence studies show that gambling is a severe problem effecting
approximately 1% of the world’s population (Wiebe and Volberg 2007). In general, the lowest prevalence rates
of problem gambling tend to occur in Europe, with intermediate rates in North America and Australia, and the
highest rates in Asia (Williams et al. 2012). The ratio of pathological gambling in high prevalence Asian
countries like Hong Kong, Singapore and Macau is about 2% (Fong and Orozio 2005; Wong and So 2007) . In
the first prevalence study conducted in NC in 2007, the ratio of pathological gambling was estimated as 2.2%
(Çakıcı 2012). The ratio of problem gambling is usually higher among adolescents, indigenous minority groups,
and among migrant communities (Derevensky and Gupta 2004; Westermeyer et al. 2005).

Over the past decade, the nature of gambling in NC has been changing, largely due to the introduction of the
casinos, but also to the increasing availability of other forms of gambling such as betting and internet gambling.

Besides growing interest in the social impact of these new forms of gambling on the Northern Cypriot population, there has, to date, been little reliable information available about gambling behavior. This study is a follow-up study of the one conducted in 2007 and the aim is to investigate the characteristics of adults' participation in gambling, and to determine the prevalence of 'problem and pathological gambling' in NC.

Methods

Sampling

The population of this study is all those people living permanently in NC who speak Turkish, and within the age group 18-65. Household interviews were conducted with 966 people. To achieve a representative sample of adult population, random multi-staged, stratified sampling quota was used. Different strata used were age (18-29, 30-39, 40-49, 50-65), gender (male/female), urban/rural, and geographical region (Lekosa, Magusa, Girne, Guzelyurt and Iskele) and they were determined as represented on the last national statistics and demographic survey carried out on 4th December 2011 (Census of Population 2011). These geographical regions are separated into quarters in the urban areas and into villages in the rural areas, and research contact points were chosen from these at random.

Fieldwork

The study was carried out between April and May 2012 in NC. Interviews were conducted in 16 quarters, 17 villages and 5 city centers. At the contact points in urban areas, interviewers started from a street determined at random in the office, and for rural areas interviewers started from the centre of the village and went north, east, south and west. Interviewers covered squares, starting at the lowest number on the right-hand side of a street and going to every third house. At the first turn they would turn right and would continue contacting households on the right hand side until they completed the square. Then they would then cross to the next square and continue in the same way. This enabled a uniformity of 'pacing', thereby eliminating interviewer bias. The research covered every third household. In order to choose the person to participate in the research, once the household chosen to participate in the survey was contacted, a male-female quota was taken into consideration and the female in the first house and the male in the second house were chosen. Care was taken to keep within the age quotas. If there was more than one candidate for the research, the one whose birthday was last was chosen. Twenty-two interviewers were involved and in order to minimize interviewer bias, each conducted about forty five interviews.

Questionnaire

For data collection, a 30 item questionnaire prepared by the researcher, and the Turkish version of the Revised South Oaks Gambling Screen (SOGS) were used. SOGS was developed by Lesieur and Blume (1987) and a Turkish reliability and validity study conducted by Duvarcı and Varan (2001).

South Oaks Gambling Screen (SOGS)

The original form of SOGS consists of 44 questions. The SOGS index is constructed from 20 questions which are scored as 1 or 0. 'Probable pathological gambling' is indicated by a score of 5 or more on the SOGS and 'problem gambling' is indicated by a score of 3 or 4 on the SOGS (Volberg and Steadman 1988). The

1 Turkish version of the SOGS consists of seventeen of the 20 original SOGS items and two appendant culturally
2 relevant items for which the cut off point for 'probable pathological gambling' is a score of 8 (Duvarcı and
3 Varan 2001).

4 At the beginning of the interview, the respondents were informed that the purpose of the study was to
5 investigate gambling behavior and the information obtained would be used only for scientific purposes without
6 mentioning their personal data. The questionnaire and Turkish version of SOGS were administered to the
7 volunteers accepted to take part at the study by the interviewer. Written informed consent was taken from each
8 participant. Each interview took approximately 40 minutes.
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10 11 12 **Statistical analysis**

13 Statistical analysis was made with SPSS 21 for Windows. Chi-square analysis was used to compare different
14 characteristics of the groups. Significance levels of 0.05 were adopted. Logistic regression was used to determine
15 the associations between the risk factors (independent variables) and problem and possible pathological
16 gambling behaviors (dependent variables). Independent variables were gender, age, length of time married,
17 living status, education, children, employment and country of birth.
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24 **Results**

25 **Gambling participation**

26 The lifetime prevalence of participating at least once in any of the 17 gambling activities included in the
27 survey was 74.8%. The highest participation was for the lottery games like the national lottery, instant scratch
28 games and numerical lotto. The national lottery had a 5.8% increase in 2012 compared to the study conducted in
29 2007 (Çakıcı 2012). Whereas the numerical lotto was the second most widely recorded gambling activity in
30 2007, instant scratch games, with the highest increase of 9.7% replaced numerical lotto in 2012. Among the
31 games which are played once a week or more, casino games, the national lottery and internet gambling are found
32 to have the highest increase. Traditional card games played at the cafes still preserve their presence. Among the
33 games which are played less than once a week instant scratch cards, sports toto-sports lotto, card games and
34 gambling on the internet are the gambling activities which show the highest increase in ratio during these five
35 years. The comparative distribution of gambling games between 2007 and 2012 is shown in Table 1.
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42 The participants who gamble less than once a week preferred the casino primarily, followed by the betting
43 office. The participants who stated that they gambled once a week or more preferred the betting office to the
44 casino. There is a considerable increase in the ratio of playing casino games compared to 2007 data (Çakıcı
45 2012). Gambling on the internet is also becoming more prevalent. Participants admit to having borrowed money
46 from credit cards (9.8%), common family income (8.6%), friends (8.8%), banks and credit institutions (3.7%),
47 casinos (2.8%) and moneylenders (0.5%) to subsidize their habit. The participants also mention that more others
48 in their social circle, such as close friends (42.6%), relatives (22.6%), father (12.8%) siblings (11.2%), partners
49 (6.3%) and even their children (3.7%) have taken up gambling.
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54 There are characteristic patterns of gambling participation in NC. For example, men in NC (n=328, 66.8%)
55 are more likely than women (n=185, 42.2%) to gamble on horse and dog races ($\chi^2=134.41$, $p<0.001$), card games
56 ($\chi^2=50.204$, $p<0.001$), okay games ($\chi^2=134.41$, $p<0.001$), dice games ($\chi^2=18.101$, $p<0.001$), cockfighting
57 ($\chi^2=23.475$, $p<0.001$), sports toto/sports lotto ($\chi^2=142.635$, $p<0.001$), numerical lotto ($\chi^2=22.277$, $p=0.000$), and
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1 skill games (e.g. billiards) ($\chi^2=13.057$, $p<0.001$). These games are mostly played at betting offices and traditional
2 coffee shops where men mostly go. On the other hand, no difference remains between men and women regarding
3 casino games, gambling games on the internet, instant scratch cards, national lottery and speculations. Whereas
4 the Cyprus-born residents mostly prefer to bet on horse and dog races, cockfighting, instant scratch cards and
5 gambling games on the internet, Turkey-born residents are more likely to gamble particularly on card games,
6 okay games and skill games. However, Cyprus-born residents (15.8%) experience more gambling problems than
7 Turkey-born residents (8.4%) ($\chi^2=5.090$, $p<0.05$).
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10 11 **Pathological gambling**

12 The ratio of lifetime probable pathological gamblers determined with SOGS score in the sample was 3.5%. If
13 this ratio is used for the whole population of NC, (Census of Population 2011) among 294,396 people, 10,303
14 (3.5%) NC residents aged 18–65 can be considered lifetime probable pathological gamblers. 9.2% of the
15 participants claimed to have experienced a problem related to gambling and this means that about 27,084 people
16 might have experienced a gambling related problem.
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19 As indicated in other studies, ‘problem’ gambler group was combined with ‘probable pathological’ gambler
20 group as they show more similar characteristics than ‘non-problem’ gambler group (Volberg and Steadman
21 1988; Volberg et al. 2001). The distribution of demographic characteristics of ‘non-problem people’ (scoring
22 less than 3 points on SOGS) and ‘problem and pathologic gamblers’ (scoring 3 or more points on SOGS) was
23 compared for both 2007 and 2012 results (Table 2).
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26 The risk factors for problem gambling are shown at table 4. Being male, being between the ages of 18 and
27 29, having high education, having an occupation and being born in Cyprus rather than Turkey increase the risk
28 of experiencing gambling related problems (Table 3).
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35 **Discussion**

36 The study shows that gambling is becoming more prevalent in NC and that pathological gambling is also
37 increasing. Compared to the 2007 data (Çakıcı 2012), pathological gambling has increased from 2.2% to 3.5%,
38 problem and pathological gambling have increased from 11.9% to 12.7%, and having participated in any form of
39 gambling has increased from 55% to 79.8%. These findings indicate that pathological gambling in NC is more
40 widespread than in the high prevalence countries of Asia (Wong and So 2003; Fong and Orozio 2005).
41 Extremely high prevalence rates similar to those identified in NC have only been found among three specific
42 ethnic groups (Table 4). These include the Puerto Ricans in Puerto Rico (Volberg and Vales 1998), Maoris in
43 New Zealand (Abbott and Volberg 1996) and Native Americans in North Dakota (Volberg and Silver 1993).
44 Volberg and Vales (1998) state that the common characteristics of these three groups are a history of
45 colonization and related economic exploitation, and remaining relatively disadvantaged in socio-economic terms,
46 low levels of formal education and high unemployment. NC has common characteristics with these groups as it
47 was an English colony for 82 years, has been subject to economic embargos as an unrecognized country and is
48 dependent therefore on Turkey for support.
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56 Compared to the 2007 survey (Çakıcı 2012) there is now more access to gambling venues in NC and more
57 participation in gambling activities. In parallel with this, problem and pathological gambling have also increased.
58 The number of betting offices was 70 in 2007, and reached 75 in 2012. The betting offices are socially accepted
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1 and as they are almost the only leisure place in the villages, they have become a place for low-income people to
2 gamble on a frequent basis. Studies show that as gambling becomes more socially acceptable and accessible,
3 then adults in the general population start to gamble in increasing numbers (Shaffer et al. 1999). Whereas in
4 2007 there were 20 Casinos, 315 tables and 3612 machines, by 2012 the number of casinos had increased to 24,
5 the number of tables to 430, and the machines to 4212. Studies show that the increased number of casinos and
6 especially the increased intensity of electronic gaming machines increase the problem gambling ratio (Storer et
7 al. 2009). It might be concluded that the increasing availability of gambling opportunities may result with an
8 increase in prevalence of gambling related problems in the general population (Griffiths 1999). However, a
9 contradictory example to this argument might be Macau which was a Portuguese colony in the past and tried to
10 solve its economic problems by becoming a gambling city. The gambling prevalence in Macau is lower than
11 Hong Kong which shares similar a cultural and political background with Macau but is not a gambling city
12 (Wong and So 2003; Fong and Orozio 2005). Orford (2005) suggests that exposure to gambling and gambling
13 related harms is not in fact similar to the patterns identified for alcohol, tobacco and other similar substances.
14 The relation between gambling exposure and gambling harm is not linear and in fact there is adaptation to
15 potential risk and harms through time (Shaffer 2005).

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22 The increasing trend of problem and pathological gambling in NC indicates that this adaptation process has
23 not occurred yet. The first reason for the delay in the adaptation process may be that there is still an ongoing
24 increase in the number of casinos and betting offices, and that the possibilities presented by these places continue
25 to make their attractiveness grow. The options provided by the casinos are also very attractive for native people
26 who do not have a good socioeconomic status and have low prospects for social activity. Free food, alcohol and
27 cigarettes are given to the players at the casinos. The casinos also offer their customers package deals where
28 gambling and prostitution are combined (Guvén-Lisaniler et al. 2005). The second reason may be related to the
29 perception of the casinos as negative and alien by native people. Adaptation to what is perceived to be 'bad'
30 cannot be easily accomplished. The majority of the casinos in NC are owned by foreigners and foreign labor is
31 employed. Casinos are thus perceived as an alien economic agent that run contrary to the interests of Turkish
32 Cypriots and cause numerous problems (Alipour and Vughaingmeh 2010). The third, connected, reason may be
33 that casinos, unlike betting offices are legally forbidden to NC citizens. Adaptation to what is forbidden is not
34 expected. However, the forbidden nature of activities like gambling, drugs, alcohol and smoking make people -
35 especially adolescents - more prone to engage in them (Netemeyer et al. 1998). Furthermore, the prohibition
36 against casinos has not been actively applied in NC, and hence has not been successful in preventing the increase
37 in gambling. As the NC community is small and family relations are collectivist and traditional (Zorba 2012), the
38 gamblers are being stigmatized. Stigmatization is especially observed in small communities and the shame
39 becomes a barrier to the search for treatment and this too contributes to the high prevalence of gambling (Tse et
40 al. 2004). The fourth reason for high problem gambling prevalence in NC may be the lack of prevention
41 programs to increase awareness, help cope with gambling problems and provide effective treatment facilities for
42 people suffering from this problem. Effective public health campaigns to raise awareness of the risks of problem
43 gambling and the availability of treatment services have the potential to counteract the problem and thus
44 gambling prevalence may remain static or decline over time (Abbott et al. 2004). In addition, as noted above, a
45 fifth reason, which also seems to underpin the others, is the traditional gambling culture. Scott (2003), for
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1 example, shows how coffee shops and casinos may interact and how the existing local gambling culture in
2 Cyprus and the rapidly growing global casino industry may be mutually promoting each other.

3 When we examine the literature about pathological and problem gambling, being younger than 29 years old,
4 male, unmarried, unemployed, an immigrant, and low education level are found as risk factors (Volberg 1988;
5 Volberg 1994; Volberg et al. 2001; Potenza et al. 2001). In this study, being younger than 29 years old, being
6 male, unmarried, and living alone are found to be risk factors similar to those described in the literature.
7 However, although the literature identifies being an immigrant as a major risk factor, there is actually a higher
8 rate of problem gambling among Cyprus-born residents rather than Turkey born immigrants. In this regard it is
9 worth underlining that native Turkish Cypriots have become a minority group in NC as their population has
10 decreased to about 140 thousand due to emigration to countries such as the UK, Australia and Canada as a result
11 of the inter-communal conflict. Since Turkey's intervention in 1974, the number of immigrants from Turkey has
12 outgrown the number of Turkish Cypriots (Hatay 2007). The social and political relations between Turkish
13 Cypriots and immigrants from Turkey are strained, with Turkish Cypriots expressing the feeling that they have
14 been invaded and culturally and physically annihilated (Navaro-Yashin 2006). Experiences of loss of culture,
15 changes in social norms, breakdown of families and loss of social or economic status can be considered the
16 reasons for transition from social gambling to problem gambling (Dyall et al. 2002). The contradiction between
17 the relationship of gambling and migration in NC when compared to the extant literature may be related to an
18 acculturation process which has caused the native culture-Turkish Cypriots to start to show minority
19 characteristics, and this change in community structure may be related to increased gambling among Turkish
20 Cypriots.

21 New research should be conducted in regions like NC where there is a rapid increase in gambling to
22 understand the impacts of gambling on vulnerable, at-risk populations. Specific communities with a high
23 gambling prevalence have common characteristics but each community also has some characteristics unique to
24 itself. Problem gambling among NC people cannot be explained solely as an individual problem but should be
25 understood within its social context. This article reveals that socio-cultural aspects need to be taken into
26 consideration in the struggle against problem gambling in NC. To have a better understanding of the social
27 impacts of gambling in NC, further studies especially on acculturation are needed. Effective prevention
28 strategies and programs can be developed based on these research findings to increase awareness. Treatment and
29 rehabilitation centers should be established. Public campaigns need to be implemented which promote services
30 among the NC population in order that NC gamblers are encouraged to seek help at an earlier stage. A
31 multidisciplinary approach is required to achieve effective public health intervention and social policies to
32 prevent gambling related problems in NC.

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Table 1. Distribution according to types of gambling games.

Types of gambling	Less than once				Once a week or more	
	Never		a week			
	2007	2012	2007	2012	2007	2012
	%	%	%	%	%	%
Horse/dog races	80.0	77.2	12.1	14.3	8.2	8.5
Card games	89.3	82.7	7.2	13.1	3.4	4.2
Okay games	92.9	89.7	4.7	8.4	2.4	1.9
Dice games	98.5	95.4	0.9	3.1	0.6	1.5
Cockfighting	98.4	92.4	0.9	5.6	0.8	2.0
Sports toto / sports lotto	86.0	77.4	11.1	18.3	2.8	4.4
Numerical lotto	75.5	73.1	20.2	22.1	4.3	4.8
Instant scratch cards	80.4	70.7	16.8	25.0	2.8	4.3
National lottery	62.2	56.4	33.3	35.9	4.5	7.7
Speculations	95.3	90.6	4.3	7.2	0.4	2.2
Casino games	81.9	76.2	13.3	16.8	4.7	7.0
Skill games (billiard etc.)	95.6	91.1	3.3	6.8	1.1	2.1
Gambling games at internet	97.3	90.1	1.9	7.3	0.6	2.6
Other gambling games	85.9	95.3	0.6	2.8	0.2	1.9

Table 2. Demographics of non-problem and problem gamblers in North Cyprus.

Demographic variable	Lifetime non-problem people, %		Lifetime problem and pathological gamblers, %	
	2007 (SOGS<3)	2012 (SOGS<3)	2007 (SOGS ≥3)	2012 (SOGS ≥3)
Gender				
Male	85.5 ^b	86.5 ^d	14.5 ^b	13.5 ^d
Female	95.4 ^b	95.1 ^d	4.6 ^b	4.9 ^d
Age (years)				
18-29	86.2 ^a	86.1 ^c	13.8 ^a	13.9 ^c
30-39	94.4 ^a	93.0 ^c	5.6 ^a	7.0 ^c
40-49	87.9 ^a	89.1 ^c	12.1 ^a	10.9 ^c
50-59	92.4 ^a	92.1 ^c	7.6 ^a	7.9 ^c
60 and up	93.0 ^a	94.9 ^c	7.0 ^a	5.1 ^c
Country of Birth				
Cyprus	89.9	90.4	10.1	9.6 ^c
Turkey	90.6	94.4	9.4	5.6 ^c
Education				
High school below	89.6	93.6 ^c	10.4	6.4 ^c
High school and over	88.3	88.8 ^c	11.7	11.2 ^c
Marital Status				
Un-married	86.2 ^b	89.6	13.8 ^b	10.4
Married	92.7 ^b	90.8	7.3 ^b	9.2
Separated/ divorce	73.9 ^b	89.3	26.1 ^b	10.7
Widowed	89.2 ^b	95.5	10.8 ^b	4.5
Children				
No	88.0	90.9	12.0	9.1
Yes	91.3	90.5	8.7	9.5
Monthly Income				
Minimum wages below	92.7 ^a	91.2	7.3 ^a	8.8
Minimum wages over	88.5 ^a	90.3	11.5 ^a	9.7
Employment				
Employed	88.7	88.2 ^d	11.3	11.8 ^d
Un-employed	92.7	94.3 ^d	7.3	5.7 ^d

^aStatistically significant at the $p < 0.05$ level in 2007. ^bStatistically significant at the $p < 0.01$ level in 2007.

^cStatistically significant at the $p < 0.05$ level in 2012. ^dStatistically significant at the $p < 0.01$ level in 2012.

Table 3. Odds ratio of the risk factors.

Demographic Variable	Problem and Pathologic Gamblers / Non-problem people	
	Odds ratio	%95 CI
Gender (male / female)	1.99	(1.37 - 2.88)*
Age (29 and under / 29 over)	1.65	(1.03 – 2.63)*
Place of birth (Cyprus / Turkey)	2.01	(1.08 – 3.75)*
Marital status (non-cohabiting / married)	1.12	(0.78 – 1.61)
Marriage time (5 year \geq / 5 year $<$)	0.82	(0.42 – 1.59)
Living status (lonely / someone)	1.53	(0.95 – 2.48)
Education (high-school and over / below)	1.61	(1.05 – 2.45)*
Employment (employed / un-employed)	1.97	(1.31 – 2.97)*

*p \leq 0.05 Significance Levels, CI = Confidence Interval.

Table 4. Comparison of prevalence rates for some jurisdictions and North Cyprus.

Classification of Jurisdictions* (used Instrument)	Problem Prevalences %	Probable Pathological %	Combined %	Sources
<u>High prevalence</u>				
Hong Kong (DSM-IV)	4.0	1.8	5.8	Wong & So (2003)
Singapore (DSM-IV)	2.0	2.1	4.1	Ministry of C.Y & S. (2005)
Macau (DSM-IV)	2.5	1.8	4.3	Fong & Orozio (2005)
<u>Between high and extremely high prevalence</u>				
North Cyprus (2007) (SOGS-L)	9.7	2.2	11.9	Çakıcı (2012)
North Cyprus (2012) (SOGS-L)	9.2	3.5	12.7	This study
<u>Extremely high prevalence</u>				
Puerto Rico (SOGS-L)	6.4	7.4	13.8	Volberg & Vales (1998)
N.Dakota Native Americans (SOGS-R)	7.1	7.1	14.2	Volberg & Silver (1993)
New Zealand Maori (SOGS-L)	8.7	5.9	14.6	Abbot & Volberg (1996)

*Classification of the jurisdictions is based on the classification of Williams et al. (12) and Volberg and Vales (20) studies.