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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 (NC) in 2012 are 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 NC, 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 were used. Prevalence rates are compared with the results of the study conducted in 2007 using the same methodology and survey form. The lifetime prevalence of participating at least once in any of the 17 gambling activities investigated in the survey was 66.4 %. 3.5 % of the respondents scored as lifetime probable pathological gamblers and 9.2 % as probable problem gamblers. Risk factors for becoming probable problem and pathological gamblers include being male, being in the 19–28 age group, having a high education level, having a job and being born in Cyprus. This study shows that the prevalence of problem gambling is high in NC and increasing gradually. NC has socio-cultural features such as a history of colonization, socioeconomic problems and high unemployment, similar to other high prevalence gambling regions, which is suggestive of the importance of socio-cultural factors on gambling behavior.

Keywords   Gambling · Pathological gambling · Prevalence · Problem gambling

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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 1960s 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 1998). The Greek Cypriots are Orthodox Christians and speak Greek, whilst the Turkish Cypriots are Muslim, speak Turkish and identify with the Turkish culture and norms (Volkan and Itzkowitz 1994). The Turkish part—North Cyprus (NC) remains internationally unrecognized and exposed to political and economic embargoes. 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). Betting offices (where gamblers predict the results of sports matches, dog and horse races, etc.), the state lotteries of NC and Turkey, football pools (sports toto and sports lotto), instant scratch cards, and number-based lotteries (numerical lotto) for the financing of sports clubs are all accepted as legal forms of gambling. Casinos are prohibited to NC citizens, but in practice they still they have easy access as there is no effective control.

Gambling can have adverse psychological, social, and biological effects (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). Neal et al. (2005) define problem gambling in terms of having difficulties in limiting money and/or time spent on gambling leading to adverse consequences for the gambler, others, or for the community. Problem gambling may range from mild, moderate to severe. The term 'pathological gambling' is synonymous with severe problem gambling (Williams et al. 2012a). Although 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 ten criteria (American Psychiatric Association 1994). These included 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 shows that pathological gambling is approximately 1 % (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. 2012b). The ratio of pathological gambling in high prevalence Asian countries like Hong Kong, Singapore and Macau is about 2 % (Wong and So 2003; Fong and Orozio 2005). 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 with the same methodology and similar sample (929 participants). 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, a 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 (Lefkosa, 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 center 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. Finally the sample had the same ratio of gender, urban/rural, age and geographic region distribution as in the 2011 census.

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.

South Oaks Gambling Screen (SOGS)

SOGS was developed by Lesieur and Blume (1987). 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 (Volberg and Steadman 1988). A Turkish reliability and validity study of SOGS was conducted by Duvarcı and Varan (2001). The Turkish version of SOGS is almost a direct translation of the original instrument with respect to content and form. 17 of the 20 original SOGS items were found to discriminate Turkish pathological gamblers from non-pathological gamblers. Three items (16b, 16g, 16i) were replaced by two culturally relevant items. The items omitted were about 'from whom the respondent borrows money for gambling'. In the original form item 16b is 'the spouse', item 16g 'cashing in stocks, bonds or other securities' and item 16i 'one's checking accounts'. The replacement items were 'from friends or acquaintances' and 'cashing securities like gold and jewelry'. The cut off point for the 19-item Turkish version of SOGS that yielded the lowest false negative and false positive percentages (and thus has the highest sensitivity and specificity rates) was 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 revealing personal data. The questionnaire and Turkish version of SOGS were then administered to the volunteers who agreed to take part in the study by the interviewer. Written informed consent was taken from each participant. Each interview took approximately 40 min.

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. Multivariate 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 66.4 % as opposed to 55 % in 2007 (Çakıcı 2012). The highest

participation was for the lottery games like the national lottery, instant scratch card games and numerical lotto. The national lottery had a 5.8 % increase in 2012 compared to the study conducted in 2007. Whereas the numerical lotto was the second most widely recorded gambling activity in 2007, instant scratch card games, with the highest increase of 9.7 % replaced numerical lotto in 2012. Amongst 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, the football pools (sports toto and sports lotto), card games and gambling on the internet are the gambling activities which show the highest increase in ratio during these 5 years. The comparative distribution of gambling games between 2007 and 2012 is shown in Table 1.

Participants who gamble less than once a week preferred the casino primarily, followed by the betting office. However, those 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 the 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 an increasing number of 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 ($x^2 = 134.41$, $p < 0.001$), card games ($x^2 = 50.204$, $p < 0.001$), okey games ($x^2 = 134.41$, $p < 0.001$), dice games ($x^2 = 18.101$, $p < 0.001$), cockfighting

Table 1 Distribution according to types of gambling games

Types of gambling	Never		Less than once a week		Once a week or more	
	2007 (n = 418) (%)	2012 (n = 324) (%)	2007 (n = 353) (%)	2012 (n = 406) (%)	2007 (n = 158) (%)	2012 (n = 236) (%)
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
Okey 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
Any type of gambling	45.0	33.6	38.0	42.0	17.0	24.4

($x^2 = 23.475$, $p < 0.001$), sports toto/sports lotto ($x^2 = 142.635$, $p < 0.001$), numerical lotto ($x^2 = 22.277$, $p = 0.000$), and skill games (e.g. billiards) ($x^2 = 13.057$, $p < 0.001$). These games are mostly played at betting offices and in traditional coffee shops where men mostly go. In particular, the okey game which is a tile-based game, is very popular in Turkey, NC and among Turkish communities abroad and it is played not only at home but also at coffeehouses. On the other hand, no difference is visible between men and women regarding casino games, gambling games on the internet, instant scratch cards, national lottery and speculations. Whereas residents born in Cyprus mostly prefer to bet on horse and dog races, cockfighting, instant scratch cards and gambling games on the internet, residents born in Turkey are more likely to gamble particularly on card games, okey games and skill games. However, Cyprus-born residents (15.8 %) experience more gambling problems than their Turkish counterparts (8.4 %) ($x^2 = 5.090$, $p < 0.05$).

Pathological Gambling

The ratio of lifetime probable pathological gamblers determined by the 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, the 'problem' gambler group was combined with the 'probable pathological' gambler group as they share more similar characteristics than with the '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 in Table 4. Being male, being between the ages of 18 and 29, having a 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 retrieved with the same methodology and instrument (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 66.4 %. The prevalence results should be carefully compared with the prevalence results of other regions of the world. Different studies may have different sampling methodologies, data collection techniques and problem gambling screens, all of which can affect problem and pathologic gambling estimates. The prevalence results of this study should not be used to definitively compare the prevalence results of other regions of the world. The findings of this study may 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

Table 2 Demographics of lifetime non-problem (NP) and problem and pathologic gamblers (PPG) in North Cyprus in 2007 and 2012

Demographic variable	2007		2012	
	NP (SOGS ≥ 3) 88.1 % (n = 818) (%)	PPG (SOGS < 3) 11.9 % (n = 111) (%)	NP (SOGS ≥ 3) 87.3 % (n = 843) (%)	PPG (SOGS < 3) 12.7 % (n = 123) (%)
Gender				
Male	85.5[b]	14.5[b]	86.5[d]	13.5[d]
Female	95.4[b]	4.6[b]	95.1[d]	4.9[d]
Age (years)				
18–29	86.2[a]	13.8[a]	86.1[c]	13.9[c]
30–39	94.4[a]	5.6[a]	93.0[c]	7.0[c]
40–49	87.9[a]	12.1[a]	89.1[c]	10.9[c]
50–59	92.4[a]	7.6[a]	92.1[c]	7.9[c]
60 and up	93.0[a]	7.0[a]	94.9[c]	5.1[c]
Country of birth				
Cyprus	89.9	10.1	90.4[c]	9.6[c]
Turkey	90.6	9.4	94.4[c]	5.6[c]
Education				
High school below	89.6	10.4	93.6[c]	6.4[c]
High school and over	88.3	11.7	88.8[c]	11.2[c]
Marital status				
Un-married	86.2[b]	13.8[b]	89.6	10.4
Married	92.7[b]	7.3[b]	90.8	9.2
Separated/divorce	73.9[b]	26.1[b]	89.3	10.7
Widowed	89.2[b]	10.8[b]	95.5	4.5
Children				
No	88.0	12.0	90.9	9.1
Yes	91.3	8.7	90.5	9.5
Monthly income				
Minimum wages below	92.7[a]	7.3[a]	91.2	8.8
Minimum wages over	88.5[a]	11.5[a]	90.3	9.7
Employment				
Employed	88.7	11.3	88.2[d]	11.8[d]
Un-employed	92.7	7.3	94.3[d]	5.7[d]

Chi-square analysis of problem and non-problem gamblers

[a] Statistically significant at the $p < 0.05$ level in 2007

[b] Statistically significant at the $p < 0.01$ level in 2007

[c] Statistically significant at the $p < 0.05$ level in 2012

[d] Statistically significant at the $p < 0.01$ level in 2012

Table 3 Odds ratio and confidence intervals of demographic variables obtained from multivariate logistic regression

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 years≥/5 years<)	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[a] (used instrument)	Problem prevalence (%)	Probable pathological (%)	Combined (%)	Sources
High prevalence				
Hong Kong (DSM-IV)	4.0	1.8	5.8	Wong and So (2003)
Singapore (DSM-IV)	2.0	2.1	4.1	(Ministry of Community Development 2005)
Macau (DSM-IV)	2.5	1.8	4.3	Fong and Orozio (2005)
Between high and extremely high prevalence				
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
Extremely high prevalence				
Puerto Rico (SOGS-L)	6.4	7.4	13.8	Volberg and Vales (1998)
N. Dakota Native Americans (SOGS-R)	7.1	7.1	14.2	Volberg and Silver (1993)
New Zealand Maori (SOGS-L)	8.7	5.9	14.6	Abbott and Volberg (1996)

[a] Classification of the jurisdictions is based on the classification of Williams et al. (2012b) and Volberg and Vales (1998) studies

and Vales 1998), the 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 embargoes 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. 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 in 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 some package deals where gambling and prostitution are combined (Guven-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 and Steadman 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 than among the immigrant population from Turkey. 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 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.

Problem gambling among NC people cannot be explained solely as an individual problem but should be understood within its social context. To have a better understanding of the socio-cultural reasons for 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.

New research should be conducted in regions like NC where there is a rapid increase in gambling to understand the risk factors 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. Socio-cultural features like history of colonization, socioeconomic problems and high unemployment are common characteristics of extremely high prevalence problem gambling regions, suggesting the importance of socio-cultural factors besides individual problems on gambling behavior. This article reveals that socio-cultural aspects need to be taken into consideration in the struggle against problem gambling.

Limitations

Limitations of this self-report study may include response bias as over-reporting or under-reporting related with social desirability bias and recall bias. Gamblers may have a tendency to declare they play less often than they actually do to present themselves in a

favorable way. Williams and Volberg (2009) has demonstrated that gamblers show more interest in surveys branded as gambling studies and therefore increase problem gambling estimates whereas non-gamblers show more interest in surveys branded more generally and this results with more accurate estimates. Also it should be considered that the sample is formed from private households and not all people could be included in the survey such as the homeless or those residing within prisons, student dormitories, hospitals, and army. Some of these sub-groups are more likely to be problem gamblers (Walker and Dickerson 1996; Shaffer et al. 1999). Also frequent gamblers are less likely to be at home and less likely to be included in the survey resulting with underestimation of the prevalence of problem gambling.

References

Abbott, M. W., & Volberg, R. A. (1996). The New Zealand national survey of problem and pathological gambling. *Journal of Gambling Studies, 12*(2), 143–160.

Abbott, M., Volberg, R., Bellringer, M., & Reith, G. (2004). *A review of research on aspects of problem gambling*. United Kingdom: Auckland University of Technology, Gambling Research Centre. Commissioned by The Responsibility in Gambling Trust.

Alipour, H., & Vughaingmeh, E. M. (2010). Casino gambling tourism-a view from community: The case of North Cyprus (TRNC). *Journal of Rural and Community Development, 5*(3), 175–202.

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. (2010). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.

Ashley, L. L., & Boehlke, K. K. (2012). Pathological gambling: A general overview. *Journal of Psychoactive Drugs, 44*(1), 27–37.

Çakıcı, M. (2012). The prevalence and risk factors of gambling behavior in Turkish Republic of Northern Cyprus. *Anatolian Journal of Psychiatry, 13*(4), 243–249.

Census of Population. (2011). *Social and economic characteristics of population December 4, 2011*. State Institute of Statistics, Printing Division: North Cyprus.

Derevensky, J., & Gupta, R. (2004). *Gambling problems in youth: Theoretical and applied perspectives*. New York: Kluwer Academic/Plenum Publishers.

Dodd, C. H. (1998). *The Cyprus imbroglio*. Cambridgeshire: The Eothen Press.

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

Duvarcı, I., & Varan, A. (2001). Reliability and validity study of the Turkish Form of the South Oaks Gambling Screen. *Turkish Journal of Psychiatry, 12*(1), 34–45.

Dyall, L. (2002). Kanohiki Te Kanohi. Face to face. A Maori face to gambling. *New Ethical Journal: New Zealand's Journal of Patient Management, 5*(1), 11–16.

Fong, D. K. C., & Orozio, B. (2005). Gambling participation and prevalence estimates for pathological gambling in a Far East gambling city: Macau. *UNLV Gaming Research & Review Journal, 9*(2), 15–28.

Griffiths, M. D. (1999). Gambling technologies: Prospects for problem gambling. *Journal of Gambling Studies, 15*, 265–283.

Guven-Lisaniler, F., Rodriguez, L., & Ugural, S. (2005). Migrant sex workers and state regulations in North Cyprus. *Women Studies International Form, 28*(1), 79–91.

Harvard Mental Health Letter. (2010). Pathological gambling. *Harvard Mental Health Letter, 27*(2), 1–3.

Hatay, M. (2007). *Is the Turkish Cypriot population shrinking? An overview of the ethno-demography of Cyprus in the light of the preliminary results of the 2006 Turkish-Cypriot Census*. Oslo (PRIO). Oslo, Norway: International Peace Research Institute.

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*, 1184–1188.

Ministry of Community Development. (2005). *Youth and Sports*. Singapore: Ministry of Community Development, Youth and Sports Survey.

Navaro-Yashin, Y. (2006). De-ethnicizing the ethnography of Cyprus: Political and social conflict between Turkish Cypriots and settlers from Turkey. In Y. Papadakis, N. Peristianis, & G. Welz (Eds.), *Divided Cyprus: Modernity, history, and an island in conflict* (pp. 84–99). Bloomington: Indiana University Press Publications.

Neal, P., Delfabbro, P., & O'Neil, M. (2005). *Problem gambling and harm: Towards a national definition.* Commissioned for the Ministerial Council on Gambling. Prepared by the SA Centre for Economic Studies with the Department of Psychology, University of Adelaide. November 2005. Available at: http://www.adelaide.edu.au/saces/gambling/publications/ProblemGamblingAndHarmTowardNational Definition.pdf. Accessed February 2, 2015.

Netemeyer, R. G., Burton, S., Cole, L. K., Williamson, D. A., Zucker, N., Bertman, L., & Diefenbach, G. (1998). Characteristics and beliefs associated with probable pathological gambling: A pilot study with implications for the national gambling impact and policy commission. *Journal of Public Policy and Marketing, 17*(2), 147–160.

Orford, J. (2005). Disabling the public interest: Gambling strategies and policies for Britain. *Addiction, 100*, 1219–1239.

Potenza, M. N., Steinberg, M. A., McLaughlin, S. D., Wu, R., Rounsaville, B. J., & O'Malley, S. S. (2001). Gender-related differences in the characteristics of problem gamblers using a gambling helpline. *American Journal of Psychiatry, 15*, 1500–1505.

Scott, J. E. (2001). Everything's bubbling, but we don't know what the ingredients are -casino politics and policy in the periphery. *Journal of Gambling Issues, 4*, 1-12.

Scott, J. E. (2003). Coffee shop meets casino: Cultural responses to casino tourism in Northern Cyprus. *Journal of Sustainable Tourism, 11*(2/3), 266–279.

Scott, J. E., & Asikoglu, S. (2001). Gambling with Paradise. Casino tourism development in Northern Cyprus. *Tourism Recreation Research, 26*(3), 51–61.

Scott, J. E., Rebecca, C., Andrea, P., & Claire, L. (2013). *Playing properly: Casinos, blackjack and cultural intimacy in Cyprus. In qualitative research in gambling: Exploring the production and consumption of risk* (pp. 125–139). New York: Routledge Publication.

Shaffer, H. J. (2005). From disabling to enabling the public interest: Natural transitions from gambling exposure to adaptation and self-regulation. *Addiction, 100*, 1227–1229.

Shaffer, H. J., Hall, M. N., & Bilt, J. V. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: A Research Synthesis. *American Journal of Public Health, 89*, 1365–1376.

Storer, J., Abbott, M., & Stubbs, J. (2009). Access or adaptation? A meta-analysis of surveys of problem gambling prevalence in Australia and New Zealand with respect to concentration of electronic gaming machines. *International Gambling Studies, 9*(3), 225–244.

Tse, S., Wong, J., & Kim, H. (2004). A public health approach for Asian people with problem gambling in foreign countries. *Journal of Gambling Issues, 12*, 1–15.

Volberg, R. (1994). The prevalence and demographics of pathological gamblers: Implications for public health. *American Journal of Public Health, 84*(2), 237–241.

Volberg, R. A., Abbott, M. W., Ronnberg, S., & Munck, I. M. E. (2001). Prevalence and risks of pathological gambling in Sweden. *Acta Psychiatrica Scandinavica, 104*, 250–256.

Volberg, R. A., & Silver, E. (1993). *Gambling and problem gambling in North Dakota.* Report to the North Dakota Department of Human Services, Division of Mental Health. Albany, NY: Gemini Research.

Volberg, R., & Steadman, H. (1988). Refining prevalence estimates of pathological gambling. *American Journal of Psychiatry, 145*, 502–505.

Volberg, R. A., & Vales, P. A. (1998).*Gambling and problem gambling in Puerto Rico [Juegos de azar y el problema de juego en Puerto Rico].* Report to the Puerto Rico Treasury Department.

Volkan, V. D., & Itzkowitz, N. (1994). *Turks and Greeks: Neighbours in conflict.* Cambridgeshire: Eothen Press.

Walker, M. B., & Dickerson, M. G. (1996). The prevalence of problem and pathological gambling: A critical analysis. *Journal of Gambling Studies, 12*, 233–249.

Westermeyer, J., Canive, J., Garrard, J., Thuras, P., & Thompson, J. (2005). Lifetime prevalence of pathological gambling among American Indian and Hispanic American veterans. *American Journal of Public Health, 95*, 860–866.

Wiebe, J., & Volberg, R. A. (2007). *Problem gambling prevalence research: A critical overview.* A report to the Canada Gaming Association. Available at: http://www.canadiangaming.ca/mediauploads/pdf/78. pdf. Accessed January 20, 2014.

Williams, R. J., & Volberg, R. A. (2009). Impact of survey description, administration format, and exclusionary criteria on population prevalence rates of problem gambling. *International Gambling Studies, 9*(2), 101–117.

Williams, R. J., Volberg, R. A., & Stevens, R. M. G. (2012b). *The population prevalence of problem gambling: Methodological influences, standardized rates, jurisdictional differences, and worldwide trends*. Report prepared for the Ontario Problem Gambling Research Centre and the Ontario Ministry of Health and Long Term Care.

Williams, R. J., West, B. L., & Stevens, R. M. G. (2012a). *Prevention of problem gambling: A comprehensive review of the evidence and identified best practice*. Report prepared for the Ontario Problem Gambling Research Centre and the Ontario Ministry of Health and Long Term Care.

Wong, L. K., & So, M. T. (2003). Prevalence estimates of problem and pathological gambling in Hong Kong. *American Journal of Psychiatry, 60*, 1353–1354.

Zorba, A. B. (2012). *Northern Cypriot Culture and its impact on attitudes towards mentally ill; A qualitative study*. Unpublished master dissertation. London: Wolfson Institute of Preventative Medicine, Barts and the London Queen Mary's School of Medicine and Dentistry.