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Internet Self-Exclusion: Characteristics of Self-Excluded Gamblers and Preliminary Evidence for Its Effectiveness

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Abstract Preliminary scientific evidence indicates that online gamblers are more likely to be problem gamblers and thus point to the need for effective protection measures. This study focuses on an online self-exclusion program and seeks to comprehensively examine the benefits of this measure. It was intended to collect detailed information on the characteristics of self-excluded internet gamblers and to examine the benefits of online self-exclusion over time. The baseline sample consisted of a total of N=259 internet gamblers who self-excluded from the online gambling platform *win2day.at*. Descriptive analyses indicate that a significant percentage of respondents had gambled excessively on the internet. Follow-up surveys 1, 6, and 12 month(s) after the initiation of self-exclusion with a small sub-sample (n=20) suggest that the temporary restriction of access to one single online gambling site can indeed have favorable psycho-social effects. The article concludes with a discussion of how self-exclusion practices on the internet can be improved.

Keywords Problem gambling · Self-exclusion · Internet · Evaluation · Longitudinal

Advances in technology and the widespread availability of internet access to the general public have led to online gambling gaining increasing relevance around the world. Indeed, in recent years the internet has contributed to a notable change in the structure of the international gambling market: since individuals can now easily transform their living rooms and workplaces into virtual gambling sites, they do not necessarily need to go to traditional gambling venues if they want to gamble. It is therefore likely that this development trend reduces reservations and makes forms of gambling like roulette, slot machines, poker, or sports betting attractive to a wide audience.

Several authors argue that online gambling is associated with a rather high addictive potential (e.g., Griffiths and Parke 2002; Hayer et al. 2005). Certain characteristics inherent to online gambling are decisive for this theoretical proposition, such as the permanent availability and ease of access, the speed and broad range of games, the possibility to

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gamble anonymously without social control, and the cashless payment transactions. In fact, scientific studies with self-selecting samples consistently confirm that a comparatively high proportion of individuals gambling on the internet can be categorized as problem gamblers (e.g., Wood and Williams 2007 for internet gambling in general; Wood et al. 2007 for internet poker in particular). In contrast, the assessment of behavioral data carried out by Howard Shaffer and his associates seems to relativize these findings (e.g., LaBrie et al. 2007; LaPlante et al. 2009). Analyzing actual internet sports betting, poker playing, and casino gambling behavior of a longitudinal cohort of a leading online gambling operator (*bwin*) has led to the conclusion that almost all customers show moderate gambling patterns (for a comprehensive discussion of different methodological approaches to investigate internet gambling behavior see Shaffer et al. 2010). However, due to the absence of a validated screening instrument to assess gambling-related problems, the prevalence of online problem gambling within this sample could not be specified. Furthermore, subscribers might be engaging in internet gambling on several other sites. By focusing on a singular internet gambling provider, the true amount of individual online gambling will probably be underestimated. Interestingly, initial epidemiological research from Great Britain (Griffiths et al. 2010), Sweden (Risbeck and Romild 2010), and Canada (Wood and Williams 2009) with representative samples corroborate that online gambler groups are at greater risk of developing problematic gambling behaviors. Nonetheless, it remains unclear whether the various gambling websites increase the number of problem gamblers among the population or whether problem gamblers 'merely' view them as a further opportunity to satisfy their gambling needs. Regardless of the causal interactions, researchers agree that there is a serious need for suitable gamblers' protection instruments designed to prevent the development and perpetuation of gambling-related behavioral maladjustments in the online gambling sector.

Although online gambling operators have increasingly begun to implement preventative concepts as part of a responsible gambling strategy, these measures or bundles of measures have not, as yet, been adequately scientifically validated (Griffiths et al. 2009). Some operators are clearly willing to ensure that gamblers' protection measures are in place, yet it remains largely unknown which activities are actually commensurate with prevention goals. One of the many available measures used to minimize gambling-related harms is the option of (self-)exclusion. Formal exclusion programs have their origins in the European casino sector and are designed to prevent certain groups of people from accessing gambling facilities. Accordingly, these programs can help at-risk or problem gamblers regain control of their behavior or provide them with external support in their efforts to abstain from at least one specific form of gambling. Despite their methodological shortcomings, initial longitudinal studies of the effectiveness of casino self-exclusion show promising results and indicate that at least some of the affected gamblers profit from this protection measure (e.g., Hayer and Meyer 2010; Ladouceur et al. 2007; Nelson et al. 2010; Steinberg 2008; Townshend 2007; Tremblay et al. 2008).

As in the land-based casino sector, most reputable online gambling operators offer users the option to self-exclude or retain the right to exclude users—for example, those who create and use multiple accounts or falsify their personal details—from gambling on the site. However, the lack of collaboration between the different online gambling sites raises the question of whether there is actually any point in excluding/barring a user from one site when users can simply switch to other sites and continue gambling there. As a result, the primary goal of this study is to provide distinct empirical data on the characteristics of excluded online gamblers and present initial findings on the effectiveness of (self-) exclusion in this sector.

Current State of Research

No systematic evaluation studies which specifically address the (preventative) effects of online (self-)exclusion can be found in the literature available to date. In most cases, the sparse findings available are limited to descriptive usage analyses. Remmers (2006), for instance, presented data on one online gambling operator's (*PokerRoom.com*) gamblers' protection concept. In 2005, 4,847 users (an average of 13 per day) self-excluded from this site. The majority of those who self-excluded where young men from the USA. Overall, around 3-4% of customers made use of the protection measures offered such as maximum bet/loss restrictions or self-exclusion. In the majority of cases, inappropriate gambling behavior, such as spending too much time or money on the site, would seem to have been the crucial factor in the decision to self-exclude (Wootton and d'Hondt 2005).

The results of an evaluation study by Jonsson (2008) of the gamblers' protection measures provided by the Swedish state operator *Svenska Spel* and its internet poker platform are also purely descriptive. In an online survey of 1,031 randomly selected *Svenska Spel* poker players, 5.4% of respondents confirmed having made use of the self-exclusion option at least once in the past. This figure corresponds to 11% of at-risk players. Thirty per cent of this group switched to other poker sites during the exclusion period and continued gambling there (24% of at-risk players). Evidently, the self-enforced temporary closure of an account even with just one internet gambling site is beneficial—at least for a small group of at-risk poker players for a short period of time. In the course of a further online survey of 2,348 *Svenska Spel* customers, Griffiths et al. (2009) ascertained that 26% of respondents had made use of a special tool known as *PlayScan*, which bundles various gamblers' protection measures. Some 17% of this sub-group also had experience with self-exclusion. Their primary motives for self-excluding were to save money and address excessive gambling behavior. Overall, the *PlayScan* users regard a seven-day exclusion period to be of most use (46.3%). In addition, the results show that 42.3% of *PlayScan* users consider the self-exclusion option to be a thoroughly expedient measure (cf. International Gaming Research Unit & Betting Research Unit 2007 for similar findings).

Xuan and Shaffer (2009) recently published the results of a study that examined how the behavior of online gamblers developed immediately prior to the decision to self-exclude. They used a sample of 226 of a total of 47,603 *bwin* customers, who had set up an account with the site in February 2005. The analyses were restricted to live-action bettors who stated that they had closed their accounts as a result of gambling-related problems between February 2005 and June 2006. A matched sample of 226 live-action bettors who did not close their accounts served as a control group. The findings suggest that users register an increase in financial losses and the amount placed on each bet shortly before closing their accounts. In contrast, no evidence could be found of an increase in either their willingness to take risks—in form of bets with higher odds—or the number of bets placed each day. Consequently, the findings indicate that when self-identified problem gamblers incur increasing losses, they adopt a more risk-aversive, conservative pattern of behavior and place higher amounts on bets with lower odds or better chances of winning. Interestingly, visible changes in selected gambling parameters were observed only a few days before the accounts were closed. However, no information on developments subsequent to self-exclusion could be collected. In addition, Braverman and Shaffer (2010) published data related to the actual gambling behaviors of *bwin* customers during the first month after opening an account. The final analytic cohort consisted of 530 live-action bettors who formally closed their accounts due to several reasons. Cluster analysis revealed a small subgroup (n=15) of high-risk gamblers with signs of excessive gambling patterns based on

the characteristics of their initial stage of gambling (i.e., high-intensity and frequency of gambling, high variability of wager sizes). Eleven individuals of this subgroup decided to stop gambling due to gambling-related problems. Again, it remains unknown whether these individuals continued gambling on other websites, making the instrument of self-exclusion literally meaningless.

Method

This study forms part of a comprehensive research project aimed at determining the effectiveness of self-exclusion as a gamblers' protection measure (for detailed information on the research design, evaluation process, and measurement instruments cf. Meyer and Hayer 2010). While the findings on the benefits of self-exclusion in the casino sector have been published separately (Hayer and Meyer 2010), the analyses in this article refer solely to self-exclusion in the online gambling sector and focus primarily on (1) the characteristics of self-excluded online gamblers, and (2) the consequences of online self-exclusion over time. The sample of self-excluded online gamblers was obtained via the Austrian online gambling site *win2day.at*. Baseline data was collected over a two-year period (from December 2006 to December 2008). *Win2day.at* is operated by Austrian Lotteries and Casinos Austria AG by means of a joint subsidiary company. The site offers lottery games, casino games, a *Gamesroom*, and poker games (since 07 February 2008). Users have the possibility to self-exclude and thus be barred from using the *win2day.at* site for a defined period. At the time of the study, they could opt to have themselves excluded for a period of 1, 3, 6 or 12 month(s).

The data was collected by means of personal reports from excluded *win2day* users, who were monitored over time and surveyed on a total of four occasions. A customized questionnaire was developed to collect the baseline data (T_0). The items in this questionnaire related primarily to individual gambling behavior in the period prior to self-exclusion and various aspects of the self-exclusion measure (cf. Meyer and Hayer 2010). After a customer had taken the decision to self-exclude and completed the online registration process, a pop-up window appeared on the screen. This window referred to the study and asked if the user would be prepared to answer some questions relating to self-exclusion. After answering all these questions, users were instructed to click on a "submit" button to complete the survey. They were also asked if they would be willing to participate in a series of follow-up surveys and, if so, to provide an e-mail address for further contacts. These follow-up surveys were generally sent by e-mail in the form of an attached word file. The measurement instruments used in the three follow-up surveys—F_1 about 1 month after self-exclusion; F_2 about 6 months after self-exclusion; F_3 about 12 months after self-exclusion—were all similar in design and content and contained both customized items and validated scales. The longitudinal study focused on measuring changes, for example with regard to gambling behavior or problem status (for details of the constructs cf. Meyer and Hayer 2010).

In line with Griffiths (2010), who emphasizes the many benefits of web-based data collection methods in gambling research, the method of choice for the baseline survey was the online questionnaire. The basic advantage of this method lies in the fact that the internet provides improved access to target groups that are otherwise difficult to reach—like, for example, self-excluded online gamblers. With due care to potential pitfalls and error sources, the quality of the data obtained from internet-based surveys can quite easily reach or even exceed the (psychometric) levels obtained using traditional, offline survey methods (e.g., Gosling et al. 2004).

Results

Baseline Data

Response Rate and Demographics In general, a low response rate was to be expected for the *win2day* sample as a result of the lack of personal contact to participants. Overall, 294 self-excluded *win2day* users completed the internet questionnaire. The elimination of obvious standard responses reduced the number of valid responses to N=259. Since 8,237 individuals initiated 11,818 self-exclusion orders during the data collection period, this corresponds to a response rate of 3.1%.

From a sociodemographic perspective, the sample of self-excluded *win2day* users is predominantly male (n=178, 68.7%). On average, the participants are relatively young (36.2 years of age, range: 18–64 years). Of the N=259 users, 76 (29.3%) opted for a 4-week, 53 (20.5%) for a 3-month, 32 (12.4%) for a 6-month, and 98 (37.8%) for a 12-month exclusion period. The *win2day* casino games (n=103, 39.8%) top the list of gambling options perceived to be problematic, followed by the games in the *win2day Gamesroom* (n=70, 27%), and alternative online gambling options other than betting (n=33, 12.7%). *Win2day* lottery products are only ranked sixth in this list (n=26, 10%). However, the existence of gambling problems relating to one *win2day* product should not necessarily be considered to be independent of the existence of gambling problems relating to other *win2day* products (lottery games and casino games: χ^2=20.28, df=1, $p\leq$.001; lottery games and *Gamesroom*: χ^2=26.10, df=1, $p\leq$.001; casino games and *Gamesroom*: χ^2=33.22, df=1, $p\leq$.001). Seventy study participants (27%) had prior experience with the self-exclusion option (online or offline). While 37 of the individuals (14.3%) had made use of this option on *win2day* at least once in the past, 23 individuals (8.9%) had self-excluded from other internet gambling sites. In addition, 3.1% of the sample (n=8) had previously been banned by a gambling operator (online or offline).

Gambling Habits and Problem Status The parameters ‘average duration of a session’ and ‘average net weekly losses’ (both for the preceding 6 months) provide initial indications of gambling patterns on the internet platform *win2day*. For 156 individuals (60.2%), a gambling session lasted on average at least 1 h. Fifty-six survey participants (21.6%) reported typically having gambled more than 500 Euro a week on *win2day* alone. In their self-assessments, 55 individuals (21.2%) labeled themselves as problem gamblers and a further 58 (22.4%) as gambling addicts (based on their online gambling habits in the preceding 6 months; see Table 1). According to the Lie-Bet Questionnaire (Johnson et al. 1997) adapted for internet gambling, 176 (68%) study participants could be classified as probable online problem gamblers, as they meet at least one of the two defined criteria (in their lifetime). Both criteria are not independent of each other (χ^2=58.34, df=3, $p\leq$.001). Interestingly, younger sample members fall more often into the group of probable online problem gamblers (t=2.17, df=257, p=.03): participants with potentially problematic online gambling patterns have an average age of 35.2 years, while the mean age for social online gamblers is 38.4 years. The chosen duration of the self-exclusion period is also related to their gambling problem status (χ^2=7.85; df=3; p=0.049): probable problem gamblers are more likely to have themselves excluded for a longer period than individuals with non-problematic gambling patterns.

Reasons for Self-Exclusion The data shows that online gamblers consider the decision to self-exclude as a rather spontaneous action (Spontaneity Scale: 0 = *very spontaneous*, 10 =

Table 1 Gambling problem status

Self-assessment	Lie-Bet (= 0) social	Lie-Bet (≥ 1) probably problematic	
I gamble just like everyone else.	48	31	79
	(60.8%)	(39.2%)	(30.5%)
	(57.8%)	(17.6%)	
I gamble a little too much, but don't have a problem.	24	43	67
	(35.8%)	(64.2%)	(25.9%)
	(28.9%)	(24.4%)	
My gambling behavior is problematic but I am not a gambling addict.	9	46	55
	(16.4%)	(83.6%)	(21.2%)
	(10.8%)	(26.1%)	
I am a gambling addict.	2	56	58
	(3.4%)	(96.6%)	(22.4%)
	(2.4%)	(31.8%)	
	83	176	259
	(32.0%)	(68.0%)	(100%)

The 8 cells within the table contain both the absolute frequencies as well as the corresponding row and column frequencies. For example, 56 people who rated themselves as gambling addicts are also classed as probable problem gamblers based on the Lie-Bet Questionnaire. Of the 58 people in total who viewed themselves as gambling addicts, 96.6% are classed as probable problem gamblers based on the Lie-Bet Questionnaire (row frequency in percent). Accordingly, the total group of 176 probable problem gamblers based on the Lie-Bet Questionnaire contains 31.8% of those who assessed themselves as gambling addicts (column frequency in percent)

after much consideration: M=2.83, SD=3.27). Sixty-three participants (24.3%) reported an urge to abstain from all forms of gambling, 56 participants (21.6%) wanted to abstain only from online gambling, and a further 34 participants (13.1%) only intended to stop gambling on the *win2day* platform. As Table 2 indicates, prevention is the most frequently named motive for self-exclusion (n=163, 62.9%). This is followed by reasons that can be viewed

Table 2 Reasons for self-exclusion (rank order, multiple answers possible)

Reason for self-exclusion	% (n)
As a preventative measure	62.9% (163)
Lost too much money gambling on the internet	51.7% (134)
Spent too much time gambling on the internet	35.5% (92)
Loss of control	30.1% (78)
Annoyance with *win2day*	26.3% (68)
Placing bets that bore no relation to income level/wealth	25.5% (66)
Financial problems due to internet gambling	19.3% (50)
Family or relationship problems due to internet gambling	14.7% (38)
In debt because of internet gambling	12.4% (32)
At the request of family and friends	4.6% (12)
Problems at work due to internet gambling	3.1% (8)
Part of my gambling counseling/treatment program	1.2% (3)

as symptomatic of excessive gambling, such as high financial losses (n=134, 51.7%), excessive amount of time spent gambling (n=92, 35.5%), and loss of control (n=78, 30.1%). According to the information provided by the sample members, n=68 (26.3%) reported that they had chosen the self-exclusion option because they had become annoyed with the *win2day* internet platform.

Attitudes to Self-Exclusion Of a total of 12 self-generated attitude items with possible responses ranging from *totally disagree* [1] to *totally agree* [4], the following answers are the most popular: "*I have assumed responsibility for my gambling habits by electing to self-exclude*" (n=252, M=3.35, SD=.97), "*The self-exclusion agreement is enough to get my problems under control"* (n=252, M=3.06, SD=1.10), and "*I will find it easy to abstain from gambling on the internet*" (n=252, M=2.90, SD=1.06). Statements such as "*Self-exclusion only makes sense for me in combination with other treatment/counseling*" (n=252, M=1.38, SD=.80), "*I'll switch to other internet gambling services in future*" (n=252, M=1.50, SD=.99), or "*Other measures would help me more than self-exclusion to solve my problems*" (n=252, M=1.61, SD=.88) are ranked at the bottom of the scale. Taken together, it seems that the study participants reject the need for additional support and have no intention of switching to other online gambling sites to continue gambling there.

Longitudinal Data

Representativeness For the *win2day* sample (N=259), there were 29 valid responses available at F_1 (11.2%), 22 valid responses at F_2 (8.5%), and 20 valid responses at F_3 (7.7%). The comparatively low response rate raises the question of whether the respondents and drop-outs at F_1 differed systematically. However, comparison analyses using the following variables as collected at T_0 revealed no obvious bias: gender (χ^2=1.70, df=1, p=.19), age (t=-1.51, df=32.60, p=.14), duration of exclusion (χ^2=.73, df=3, p=.87), and gambling problem status (χ^2=3.29, df=1, p=.07). Despite the high number of drop-outs, there is a good degree of certainty that the longitudinal results are still valid for the baseline sample. It should be noted that the following analyses only apply to those study participants who provided data at all measurement points (n=20).

Changes Over Time A reduction in possible gambling-related problems can be observed on a descriptive level (see Table 3). While 80% of the participants could be classified as potential internet problem gamblers at measurement point T_0, this percentage subsequently decreases over time to 5.3% (F_2) or 30% (F_3). This is also consistent with the statements made by the individuals regarding changes in their gambling patterns. Regardless of the specific parameter—frequency, duration, or amount bet—an increase in gambling behavior can only be observed in isolated cases following self-exclusion from the *win2day* platform.

It is noteworthy that the follow-up surveys reveal none of the study participants sought additional professional external support. The findings for the indicator 'importance' (importance of stopping gambling on the internet at that moment [T_0] or not gambling on the internet [F_1, F_2, F_3]: 0 [*very unimportant*] to 10 [*very important*]) are also significant (F=4.54, df=3/54, p=.007). The subsequent test for intra-individual contrasts shows a statistically relevant mean difference between the baseline data (T_0) and the second follow-up (F_2) ($p \leq .05$). As was to be expected, the relevance of abstaining from internet gambling decreases after the decision to self-exclude has been made. However, confidence in doing so did not change significantly over time (Confidence Scale: 0 [*not at all confident*] to 10 [*very*

Table 3 Changes in selected indicators over time

Indicator	T_0	F_1	F_2	F_3	Results
Gambling problem status[a]	SG: 20.0% PG: 80.0% (internet gambling)	n.a.	SG: 94.7% PG: 5.3% (gambling in general)	SG: 70.0% PG: 30.0% (gambling in general)	The SG percentage is above all lower at F_2 than T_0
Change in gambling behavior—frequency (in days)[b]	n.a.	le: 72.2% u: 22.2% m: 5.6%	le: 58.8% u: 35.3% m: 5.9%	le: 55.0% u: 35.0% m: 10.0%	An increase in gambling behavior can only be observed in isolated cases
Change in gambling behavior—duration (in time)[c]	n.a.	s: 55.6% u: 38.9% l: 5.6%	s: 64.7% u: 35.4% l: 0%	s: 35.0% u: 55.0% l: 10.0%	
Change in gambling behavior—amount gambled[d]	n.a.	lo: 61.1% u: 38.9% h: 0%	lo: 50.0% u: 37.5% h: 12.5%	lo: 50.0% u: 40.0% h: 10.0%	
Importance Scale[e]	M=7.95	M=5.26	M=4.47	M=5.21	F=4.54, p=.007* $T_0>F_2$*
Confidence Scale[f]	M=7.30	M=6.60	M=7.48	M=6.50	F=.90, p=.42
Sought professional external support	n.a.	None of the subjects had ever sought professional external support for gambling problems			
Benefit Scale[g]		M=2.20	M=2.75	M=2.50	F=1.78, p=.18

*$p \leq .01$

[a] *SG* social gambler, *PG* probable problem gambler

Lie-Bet Questionnaire applied to online gambling (T_0) and gambling in general (F_2, F_3)

[b] *le* less, *u* unchanged, *m* more

[c] *s* shorter, *u* unchanged, *l* longer

[d] *lo* lower, *u* unchanged, *h* higher

[e] importance of stopping gambling on the internet at that moment (T_0) or not gambling on the internet (F_1, F_2, F_3): *very unimportant* (0) to *very important* (10)

[f] confidence of reaching this goal: *not at all confident* (0) to *very confident* (10)

[g] general benefits of self-exclusion: *very high* (1) to *very low* (5)

confident]; F=.90, df=2.18/41.44, p=.42). Finally, while the benefits of self-exclusion from online gambling are generally assessed to be rather high (Benefit Scale: 1 [*very high*] to 5 [*very low*]), they also show no significant change over time (F=1.78, df=2/38, p=.18).

Discussion

This study breaks new ground in research into self-excluded online gamblers by allowing us for the first time to generate differentiated empirical data on the characteristics of these individuals. Furthermore, it also permitted us to monitor a small group of self-excluded online gamblers over time and survey them on multiple occasions.

The findings show that it is predominantly men and individuals in their twenties or thirties who elect to self-exclude. These characteristics reflect the general over-

representation of men and comparatively young people in the group of internet gamblers (Wood and Williams 2009). The fact that respondents most frequently attribute their problems to internet casino games also conforms with theory. In contrast, participation in internet lottery games only led to problems for a few participants. This rank order mirrors the potential risk posed by online gambling forms subject to their actual mode of play: there is an increased risk of addiction to gambling forms which can be played more quickly and are offered in web-based format (like most typical casino games). However, the situation is different for products which originate in the offline sector and have a lengthy duration of play, like certain lottery games. For these products, the internet is only an alternative sales channel and seems to have no lasting influence on the addictive potential. Nonetheless, the findings further show that the existence of a problem with one form of gambling on *win2day* increases the probability of a person also experiencing problems with another *win2day* product. Correspondingly, the individual sectors on *win2day*—lottery games, casino games, *Gamesroom*, and the poker room—should not be treated in isolation. From an empirical perspective, preference should therefore be given to a comprehensive access restriction scheme which extends to all products on a gambling website.

Subsequent analyses of selected parameters and gambling problem status confirm that a by no means insignificant percentage of respondents had gambled excessively on the internet. Indeed, according to the Lie-Bet Questionnaire 68% of the self-excluded individuals can be categorized as probable problem gamblers. This sub-group predominantly contains younger people (cf. Remmers 2006). Over a quarter of participants in the study already had experience of self-exclusion in the online or offline sectors; 14% had opted to self-exclude from *win2day* at least once in the past. To reduce the numbers of multiple self-exclusions over time, the maximum duration of the self-exclusion option on *win2day* should be extended beyond 1 year. The analysis of the reasons for self-exclusion confirms that the gambling behavior of most individuals is problematic. Aspects like the loss of too much money, spending too much time gambling, or perceived loss of control were ranked in positions 2 to 4 on the list of reasons for self-exclusion (cf. Wootton and d'Hondt 2005).

In contrast, it should be stressed that motives which are not related to problem gambling can also play an important role in the decision to self-exclude in the online sector. Prevention and annoyance with *win2day* are two such reasons identified in this study. However, the meaning of a 'preventive self-exclusion' should be questioned, since some of the participants presumably do not use the term in a medical sense (i.e. the primary prevention of a problem), but are instead referring to the prevention of further, more serious damages (cf. Hayer and Meyer 2010). Also relevant in this context is the fact that decisions to self-exclude are fairly spontaneous. This result may be explained not only by the rather low extent of gambling problems in comparison with casino self-excluders, but also with the fact that a user can self-exclude with only a few mouse clicks. The combination of low access barriers and the anonymity of the internet create a context that facilitates self-exclusion and contrasts with the shame often associated with the self-exclusion registration process in land-based casinos (cf. Singleton 2008). A corresponding, easily accessible option would thus be something to strive for in the offline sector: a low threshold option to self-exclude from a casino via the internet could serve to noticeably increase the use of this measure (cf. Nowatzki and Williams 2002).

When directly compared to self-excluded casino gamblers, self-excluded gamblers in the online sector are younger and show a lower degree of gambling-related problems (cf. Meyer and Hayer 2010). While in most jurisdictions casino self-exclusion programs address almost exclusively pathological gamblers and thus have predominantly secondary or

tertiary preventive value (e.g., Ladouceur et al. 2000; Steinberg 2008), online self-exclusion programs may also have a primary preventive impact and the potential to help social gamblers in controlling their adequate gambling patterns. On the one hand, it seems plausible that a sub-group of non-problem gamblers chose to self-exclude to temporarily stop gambling as a means of protection in a proactive stance. On the other hand, some of the non-problem gamblers obviously decide to close their accounts due to reasons that are not related to responsible gambling practices. For example, being annoyed by *win2day* could reflect the subjective attribution of a frustrated player that unfair business practices (e.g., a manipulated software) have to account for his or her losing streak. As a consequence, the decision to self-exclude is made simply to 'punish' the operator. Further studies with larger samples have to figure out more precisely, whether such sub-groups actually exist and whether self-excluded social gamblers continue to play on other platforms. Overall, it should be kept in mind that the group of self-excluded online gamblers does include a significant number of individuals with signs of maladjustment. Similar to self-excluded casino gamblers, these individuals barely seek formal counseling or treatment. One major challenge in future will therefore lie in expediting the structural linking of self-exclusion programs (both online and offline) to professional addiction support services, offering self-excluded problem gamblers tailor-made support and encouraging them to make use of this support (cf. Blaszczynski et al. 2007 or Tremblay et al. 2008 for innovative approaches in the offline sector).

Since only a small number of self-excluded *win2day* users took part in all surveys, any conclusions regarding the long-term effectiveness of self-exclusion in this sector can only be viewed as preliminary. In general, and in concurrence with Jonsson (2008), there is an indication that the temporary restriction of access to an individual online gambling site has indeed favorable effects. The combination of a reduction in the percentage of potential problem gamblers and evidently almost non-existent switching to other websites offer preliminary support for this point of view. Various other parameters show a relatively low psychological burden in combination with a positive assessment of the benefits of self-exclusion. Altogether, the follow-up surveys indicate only one relevant change: a marked decrease in the level of willingness to stop gambling on the internet. This raises speculation that symptoms of relief set in shortly after self-exclusion and stabilize in the period that follows. The dwindling pressure may push the relevance of self-exclusion quickly into the background. Since the baseline survey was deliberately kept as brief as possible, there is a lack of detailed evidence regarding the pressure felt by respondents at the beginning of the investigation, which in turn prevents any informed statements on potential mechanisms of action.

Various factors limit the explanatory power of the findings presented. To begin with, any interpretation of the data should consider its source: personal reports provided by self-excluded gamblers from one single website in Austria. The selectivity of the sample naturally relinquishes its representativeness, thus preventing us from drawing general conclusions which apply to all self-excluded online gamblers. Given the small size of the sample, the longitudinal data must be treated with particular caution. The relatively low response rate (3.1%) at baseline is also problematic, since it is not known whether the study participants differ systematically from those individuals who declined to participate in the study. Future research should therefore strive to replicate the findings presented with larger samples and if possible, using gamblers who have self-excluded from different internet platforms. This applies in particular to the collection of the longitudinal data needed to define causal predictors of the effectiveness of self-exclusion on an individual level or determine the variables that moderate this relationship. The overriding question is which

groups are at increased risk of switching to other (virtual) gambling options. Sufficiently large samples would also allow clustering (e.g., into social or pathological gamblers) and thus counteract potential mixed effects: it is to be assumed that individuals who are under a lot of strain will be more likely to profit from a self-exclusion order than individuals who are under less strain. Aside from the problems that are immanent to the method, such as 'shared method variance' or the recourse to self-constructed items or non-validated scales, the absence of a control group of non-excluded problem gamblers impedes the assessment of the longitudinal results. Since such a control group could not be established for pragmatic, legal, and ethical reasons, it ultimately remains undetermined whether the improvements over time can be unequivocally attributed to the self-exclusion measure as opposed to other factors or conditions.

Aside from the implications for further research, the present study also reveals concrete requirements for an improvement in internet exclusion practices. In this context, the recommendations for action can basically be separated into those which (1) need to be accomplished on a political level (such as the demand for the establishment of an operator-independent exclusion list or the proposal of binding minimum standards for online self-exclusion systems), or (2) lie directly in the domain of the operators. These include the implementation of more proactive measures (e.g., targeted intervention in the form of operator-imposed bans in response to a suspected risk of gambling addiction based on gambling behavioral data); the option of short- and long-term exclusion periods; the extension of the validity of self-exclusion orders to the operator's entire product portfolio (with possible exceptions limited only to low-risk forms of gambling under restrictive conditions); the raising of awareness of the self-exclusion option and other protection measures by ensuring they are prominently referred to on the site's welcome page; the targeted monitoring of previously excluded gamblers; the provision of links to information materials, self-tests, and support facilities (including helpline numbers, self-help groups, or counseling centers); and links to software programs designed to basically prevent access to online gambling sites (cf. Meyer and Hayer 2010). Finally, accompanying research and evaluation studies must also be carried out to determine which of the individual measures available actually offer the best possible protection and what contribution can be played by internet self-exclusion programs.

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