Are scratchcards addictive? : two-year cumulative incidence and stability of pathological scratchcard gambling among Dutch scratchcard buyers

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SUMMARY

In the last two decades scratchcards or instant lotteries have been launched in more than 40 countries. The introduction of scratchcards in the Netherlands in 1994 was preceded and accompanied by a long and often heated public debate about their potential negative side effects in terms of excessive playing and pathological gambling. Opponents of the introduction of scratchcards referred to the game's structural game characteristics, which they considered potentially addictive. The most important characteristics in this respect are low threshold, short payout intervals and near misses. Based on the available studies (Chapter 1) it is concluded that the empirical evidence is insufficient to draw firm conclusions as to the addictive potential of scratchcards. The aim of this thesis was to scientifically evaluate the potential adverse effects of scratchcards at the community level, in order to assess the addictive potential and the social burden of this form of gambling in the Netherlands (Part II, Chapters 2, 3 and 4). However, it is impossible to know whether a specific form of gambling is addictive or not without the aid of valid instruments. Therefore, the secondary goal of this thesis was to investigate several of the unresolved issues in the assessment of gambling problems in general, i.e. a validation of the South Oaks Gambling Screen (SOGS) in a community study, and the development of a new instrument to assess the severity of gambling problems (Part III, Chapter 5 and 6, respectively). Before elaborating on the twofold purpose of this thesis, it is necessary to place the nature of gambling problems within its' historical, social and legal context (Part I, Chapter 1).

Part I. Introduction
Chapter 1 presents a general introduction to briefly illustrate the role that gambling has played throughout history, describes the situation of legalised gambling in the Netherlands, particularly with regard to scratchcards, and reviews some important concepts in order to clarify the nature of gambling problems. Additionally, this introductory chapter describes the purposes and provides the outline of this thesis.

Part II. The addictive potential of scratchcards
Part II investigates the addictive potential of scratchcards and the nature of the associated problems within the Dutch context. To this end a large prospective socio-epidemiological study was conducted among adult scratchcard buyers in the Netherlands. This prospective study used a nationwide non-proportional stratified sample of 12,222 adult scratchcard buyers and had three independent assessment phases: a prevalence phase (Chapter 2), an incidence phase (Chapter 3) and a qualitative phase (Chapter 4). In all studies, pathological scratchcard gambling (PSG) was defined according to the DSM-IV criteria for pathological gambling (as assessed by means of the Diagnostic Interview Schedule -DIS-T, APA 1994).

Chapter 2 describes the results of the first-phase study: a cross-sectional prevalence survey among a non-proportional stratified sample of 12,222 adult scratchcard buyers. Its main aim was to obtain a valid estimate of the addictive potential of scratchcard gambling by
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establishing the one-year prevalence of occasional\(^1\) (71.61%), recreational (25.71%), problematic (2.44%) and pathological scratchcard gambling (PSG, 0.24%) among a representative sample of adult scratchcard buyers five years after the introduction of scratchcards in the Netherlands\(^2\). Of this latter PSG group, one-third (0.09%) was uniquely addicted to scratchcards whilst the remaining two-thirds (0.15%) were also addicted to other hazardous games of chance. The findings show that scratchcards have a very low addictive potential among adults in the Netherlands.

Chapter 3 comprises the second phase of this socio-epidemiological study. The incidence study investigates the temporal stability of PSG during a two-year follow-up interval. A cost-effective design was used and only those scratchcard buyers (n=201) who had already reported some scratchcard-related problems at the prevalence phase were followed up. The estimated two-year cumulative incidence again was as low as 0.24%. In addition, this study also showed that the stability of PSG was also low (between 11.1 and 42.9% -best and worst-case scenarios). This means that even in the "worst-case scenario" more than half of the pathological gamblers no longer fulfilled DSM-IV the adapted criteria for PSG two years after the first assessment. When the 2-year follow-up stability and incidence data were taken into account, the adjusted last-year prevalence estimate for PSG among scratchcard buyers ranged between 0.23 and 0.33%. All these figures show that whereas, over time, some new cases will appear (incidence), other pathological scratchcard gamblers will recover, resulting in an overall stable and low prevalence. Therefore, the present findings show that PSG is a rare phenomenon among Dutch adults scratchcard buyers (0.24%) and even more infrequent (0.046%) for the general adult population.

Chapter 4 presents the final qualitative phase of this prospective study based on in-depth face-to-face interviews aimed to explore the effect of the DSM-IV clinical significance criterion on the number of false positive diagnoses of PSG and its consequences for the diagnostic validity of the DSM-IV symptom criteria. Participants were those respondents that fulfilled the DSM-IV criteria for PSG at the prevalence phase and had consented to take part and have the interview recorded (n=10). The main finding of this chapter shows that only 40% of the 'unique' pathological scratchcard gamblers met the DSM-IV criterion for clinical significance. As a consequence, the previously reported prevalence of 'unique' PSG among a representative population of Dutch scratchcard gamblers (0.09%) is likely to be a serious overestimation of the factual prevalence.

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\(^1\) Occasional gamblers were defined as those players who bought ≤ 10 scratchcards a month; recreational gamblers as those that had bought > 10 scratchcards in the month prior to the initial assessment and had played scratchcards for more than six month; potential problematic scratchcard gamblers (PPSG) had a total score ≥ 3 on the South Oaks Gambling Screen (SOGS-S); and pathological scratchcard gamblers were those players that met the DSM-IV criteria for PSG.

\(^2\) In contrast to the prevalence study, here the percentages of occasional, recreational, potential problematic and pathological scratchcard gambling were considered mutually exclusive and their sum is 100%. If these groups are considered as mutually inclusive (i.e. when pathological scratchcard gamblers are included in the potential problem group which are in turn included in the regular gamblers group) the percentages would be as follows: 71.61% for occasional, 28.4% for regular, 2.68% for potential problem problematic gambling and 0.24% for PSG, and, as a consequence, their sum exceeds 100%.
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Part III. The assessment of gambling-related problems
Part III deals with relevant issues in the assessment of gambling problems in general. The focus of the two chapters presented in this section is on the identification of individuals with gambling-related problems (Chapter 5) and the measure for the severity of those problems (Chapter 6).

Chapter 5 reports on the validation of the Dutch version of the South Oaks Gambling Screen (SOGS) against the DSM-III-R diagnostic criteria, using a two-stage sample design among a representative sample of 5,830 Dutch young adults (aged between 12 to 35 years). The results showed that the Dutch version of the SOGS is a valid screener for pathological gambling according to the DSM-III-R diagnostic criteria for pathological gambling in the general population. However, due to the relatively low prevalence of PG in the general population, the SOGS considerably overestimates the prevalence of PG in community samples. The DSM-III-R adjusted prevalence estimate was approximately 40% lower than the SOGS prevalence estimate. This finding is in line with other studies suggesting that all community studies using only the SOGS to determine the prevalence rate of PG overestimate the true prevalence of pathological gambling as measured with a diagnostic interview (DSM).

Chapter 6 describes the development of a new severity questionnaire, the “Gambling Problems Severity Scale” (GPSS). This severity instrument integrates the findings reported in the scientific literature and experiences from clinical practice regarding the severity of gambling problems. A multi-sample study population of 636 adults covering the entire continuum of gambling severity was used to develop the GPSS. The results underpin the excellent psychometric properties of the GPSS fulfilling the Rasch model for both the total gambling severity continuum (total scale) and for each of the life-domains (4 sub-scales). The GPSS thus enables clinicians to tailor their treatments to individual clients, to assess the functional domains for which help is needed most, to measure the effects of interventions and to compare different interventions as to their strength to ameliorate consequences on severity dimensions. Moreover, the GPSS can help researchers to establish whether the severity and nature of the gambling-related problems are indeed associated with the game of chance played.

Part IV. General discussion
The fourth and final part of this thesis comprises the general discussion. Chapter 7 integrates the main findings of this thesis in terms of the addictive potential of scratchcards, and the use of the various assessment instruments to measure the prevalence (SOGS) and severity of gambling-related problems (GPSS). In addition, methodological issues that are important for the interpretation and extrapolation of our results are addressed. The public health impact of scratchcards is put into perspective by a comparison with the effects of another low-prevalence phenomenon (heroin use <1%) and the effects of a high-prevalence phenomenon (alcohol consumption 86%). Based on these comparisons, it is concluded that the social burden of scratchcard gambling is quite low. Finally, several recommendations are made from a public health perspective and suggestions for future research are provided.
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In conclusion, this thesis presents one of the largest prospective studies ever conducted to establish the prevalence of occasional, recreational, regular, potential problematic and pathological gambling at the community level investigating one specific game of chance, i.e. scratchcards. The studies presented provide strong scientific support that pathological scratchcard gambling is a rare phenomenon among Dutch adult scratchcard buyers and even more infrequent for the general adult population in the Netherlands. In addition, the thesis establishes the validity of the Dutch version of the SOGS as a screener for pathological gambling in the general population. The thesis also represents a valuable contribution to the growing understanding of the role that the severity of gambling-related problems may have in different life domains, and provides a suitable clinical and research tool (the GPSS) to properly assess the nature and severity of these problems as well as the effects of different treatment interventions.