

Disordered gambling, type of gambling and gambling involvement in the British Gambling Prevalence Survey 2007

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Background: The purpose of this study was to examine the relationships between types of gambling and disordered gambling, with and without controlling for gambling involvement (i.e. the number of types of games with which respondents were involved during the past 12 months). **Methods:** We completed a secondary data analysis of the 2007 British Gambling Prevalence Survey (BGPS), which collected data in England, Scotland and Wales between September 2006 and March 2007. The sample included 9003 residents, aged 16 or older, recruited from 10 144 randomly selected addresses. 5832 households contributed at least one participant. Post-facto weighting to produce a nationally representative sample yielded 8968 observations. The BGPS included four primary types of measures: participation in gambling (during the past 12 months and during the past 7 days), disordered gambling assessments, attitudes toward gambling and descriptive information. **Results:** Statistically controlling for gambling involvement substantially reduced or eliminated all statistically significant relationships between types of gambling and disordered gambling. **Conclusions:** Gambling involvement is an important predictor of disordered gambling status. Our analysis indicates that greater gambling involvement better characterizes disordered gambling than does any specific type of gambling.

Keywords: gambling, internet, internet gambling, games, PG.

Introduction

Pathological gambling (PG) is a public health problem that is associated with a number of mental and physical health, interpersonal and financial problems.^{1–3} For example, among those with co-occurring mental illness, 75% of PGs in the USA have mental illness that preceded their PG, about 23% have mental illness that followed, and about 2% had these problems emerge concurrently.¹ Research also suggests that PG is associated with domestic violence, suicide and suicidal ideation, financial troubles, criminal behavior and other problems.^{3,4} These public health issues warrant continued empirical attention to gambling and gambling-related problems.

The aetiology of PG is uncertain; however, research has shown a tendency to focus on types of games as a potential primary cause. For example, a recent examination of correlates of British Internet gambling reported higher rates of disordered gambling among internet gamblers than among non-internet gamblers.⁵ Consequently, Griffiths *et al.* concluded that Internet gambling probably is more likely to contribute to gambling problems than non-internet gambling activities, explaining that this might be the case because internet gambling is less protective (e.g. year-round 24/7 access from home) of vulnerable gamblers than other types of games. Similarly, researchers and others often point to fruit/slot machines as being particularly dangerous to individuals because of their potential to promote rapid gambling (for a review, see reference 6).

Although internet gambling and fruit/slot machine gambling contribute to the overall costs associated with excessive gambling, the scientific approach to whether specific games are the primary cause of PG has been uneven; as a result of this situation, so has the evidence. As Welte *et al.*⁷ emphasized,

research that tests how well different games predict gambling problems or discriminate individuals with gambling problems from those without provides more reliable information about the relationship between games and gambling problems than research that simplistically reports the prevalence of gambling problems among individuals who participate in, or prefer, a specific type of gambling. The latter type of research is problematic because it yields findings that researchers and others cannot generalize to the general population or even to the general population of gamblers. Further, the patterns of results (i.e. risk pattern by game) generated by the two types of studies differ noticeably (see reference 7 for more information).

Recent research suggests that relying exclusively on game types as an explanatory factor for disordered gambling might mask other important contributing factors, such as the range of gambling involvement (involvement). Specifically, using a nationally representative sample of US youth, Welte *et al.*⁷ recently reported that, although a number of different types of gambling could discriminate individuals with and without gambling-related problems, the pattern of risk was not consistent with popular theories of risk (e.g. rapid-cycling technology-based forms of gambling being the most risky) often identified by less sophisticated analyses. Furthermore, Welte *et al.* demonstrated that controlling for involvement minimized or eliminated the discriminative relationships between types of games and measures of gambling disorder. The authors concluded that, contrary to conventional wisdom, the most rapid play games might not be the most problematic for US youth, and further, that overall involvement might be a more potent predictor of gambling-related problems than any specific game type.

The Welte *et al.*⁷ research is limited by its use of a US youth-only sample, who have few legal gambling options in the USA. The current study extended these findings by utilizing an adult, non-US sample. Specifically, we examined data from the British Gambling Prevalence Survey 2007 (BGPS) to determine the relative ability of games to predict gambling-related disorder, with and without controlling for

involvement. We expected that involvement would attenuate or eliminate the associations of games with gambling-related disorder.

Methods

This research utilized data from the BGPS 2007, produced by the National Centre for Social Research, sponsored by the Gambling Commission, and supplied by the UK Data Archive.⁸ The data are Crown copyright. The following is a brief overview of the BGPS methodology, as described more fully in multiple sources.^{5,9,10}

Participants

The BGPS is a publicly available dataset of interviews from a sample of 9003 residents of England, Scotland and Wales. For the current study, we used weighted data of 8968 observations characteristic of the general population. The weighted sample comprised 52% women and 48% men. With respect to age, 14% of the sample was aged 16–24, 35% was 25–44, 31% was 45–64 and 19% was aged 65 and over.

Procedures

The BGPS recruited 32 households from each of 317 geographic primary sampling units selected with a probability that was proportional to the number of addresses within them. All residents of selected households aged 16 and older were eligible to participate in the survey, indicating that their household had been selected as eligible for participation in the study and that researchers would soon visit their home.

Researchers visited dwellings a minimum of five times to recruit eligible residents to participate. During a successful contact visit, researchers completed a brief household survey and distributed hard copies (i.e. paper–pencil based) of the study survey. Participants could complete the study survey immediately, at a later point at which time researchers would collect the survey, or online. About 7% of the sample completed the surveys online. Researchers made a minimum of two reminder phone calls to residents who had promised to complete the survey, but had not done so. The overall response rate for the study was 52%.⁹

Measures

The BGPS included four primary types of measures. First, the survey included the assessment of participation in gambling types during the past year and the past 7 days, including: national lottery tickets, scratch cards, other lotteries, football pools, bingo, fruit/slot machines, virtual gaming machines (e.g. virtual roulette, keno, bingo, etc.) at a bookmaker's location, casino table games, online gambling, online betting with bookmaker, betting exchange, horse race, dog race, betting on any other event or sport in a bookmaker's, by phone or at the venue, spread betting, private betting and 'other' types of betting. Second, the survey contained two assessments of disordered gambling, the Diagnostic and Statistical Manual-IV (DSM: 11) and the Canadian Problem Gambling Severity Index (PGSI: 12). For the DSM assessment within the BGPS 2007 study, investigators report that they adapted the DSM-IV criteria into question format (e.g. when you gamble, how often do you go back another day to win back money you lost?).⁹ Response options were very often, fairly often, occasionally and never. Positive responses included answering fairly often or very often to criteria 1–7 (i.e. chasing losses, ruminating about gambling, tolerance, withdrawal, gambling to escape, lying to others about gambling and inability to cut back) and answering occasionally, fairly often or very often to

criteria 8–10 (i.e. committing a crime to finance gambling, risking relationships/jobs and asking others for money to gamble). Third, the survey included a series of variables representing gambling-related attitudes (e.g. agree or disagree that people should have the right to gamble). Fourth, non-gambling information included a variety of demographic (e.g. gender, age, socio-economics) and health-related information (e.g. do you have a long-standing health illness).

For the current study, we focused on game type, gambling problems and demographic information. For game type, we used the above-defined categories with one exception. We combined online gambling, online betting with a bookmaker and use of a betting exchange into an 'Internet gambling' category. This data reduction replicated that employed by Griffiths *et al.*⁵ on this dataset. This is a conservative measure because the combination of three categories of activities creates a variable that by definition represents greater involvement. This notation also applies to other gambling activity categories that can represent multiple gambling opportunities (e.g. casino table games). For gambling problems, we used the past year DSM-IV assessment and considered aspects of the endorsement of symptoms (i.e. % endorsing any symptoms, % endorsing 3+ symptoms, mean number of symptoms endorsed). We used the cutoff 3+ symptoms to create a categorical variable called disordered gambling status (i.e. reporting 3+ DSM gambling symptoms during the past 12 months or not). We operationally defined gambling involvement as the number of types of gambling for which an individual reported being involved during the past 12 months.

Analysis plan

The Cambridge Health Alliance Institutional Review Board reviewed and approved this secondary data analysis.

We used weighted data for all analyses. Specifically, the BGPS created a weighting variable correcting for dwelling and household selection probabilities, age, gender and individual non-response within participating households.¹³ The application of the weighting variable yields findings that can be generalized to the general population surveyed.

We conducted three primary sets of analyses. First, we calculated for the full sample, and by gender, participation rates for each game type. We used chi-square analyses to determine whether those rates varied by gender. Second, for each type of game, we calculated for the sample of individuals who had played the game during the past 12 months and, by gender, the proportion reporting any gambling symptoms during the past 12 months, the proportion reporting 3+ gambling symptoms during the past 12 months, the mean number of gambling symptoms reported during the past 12 months and the mean number of gambling types played during the past 12 months. Third, we conducted a series of logistic regressions, which used participation in each gambling type to predict disordered gambling status among past 12 month gamblers. We conducted these logistic regressions first without controlling for involvement and then added involvement as a control.

Results

Gambling participation and problems

Table 1 shows the participation in all types of gambling by gender and for the full sample. The top five gambling types with respect to participation were: the national lottery, scratch cards, betting on horses, fruit/slot machines and 'other' lottery. Also popular were private betting, bingo and other sports

betting (other than online betting or betting on horses or dogs).

We observed a number of gender differences for gambling participation. Only the rate of playing scratch cards ($\chi^2(1)=1.32$) and other lottery ($\chi^2(1)=0.00$) was the same among women as it was among men. A greater number of men than women participated in national lottery ($\chi^2(1)=11.21$), football pools ($\chi^2(1)=92.67$), fruit/slot machines ($\chi^2(1)=159.80$), virtual gaming machines ($\chi^2(1)=58.24$), casino table games ($\chi^2(1)=104.64$), Internet gambling ($\chi^2(1)=148.92$), betting on horses ($\chi^2(1)=125.27$), betting on dogs ($\chi^2(1)=69.58$), other sports betting ($\chi^2(1)=193.78$), spread betting ($\chi^2(1)=36.55$), private betting ($\chi^2(1)=161.64$) and other types of betting ($\chi^2(1)=4.16$). A greater number of women than men participated in bingo ($\chi^2(1)=104.88$).

Table 1 Participation in all types of gambling by gender (weighted $N=8968$)

Type of gambling	Percent played last year		
	Female	Male	Overall
National lottery**	55.5	59.0	57.2
Scratch cards	20.2	19.2	19.7
Other lottery	11.7	11.7	11.7
Football pools***	1.6	5.2	3.3
Bingo***	9.9	4.3	7.2
Fruit/slot machines***	9.9	19.3	14.5
Virtual gaming machines***	1.4	3.9	2.6
Casino table games***	1.9	6.0	3.9
Internet gambling***	2.9	8.9	5.8
Betting on horses***	12.8	21.7	17.1
Betting on dogs***	3.1	7.0	5.0
Other sports betting ***	2.7	9.8	6.2
Spread betting***	0.2	1.3	0.7
Private betting***	6.4	14.7	10.4
Other type of betting*	0.3	0.6	0.5
Any gambling	65.2	70.7	67.9

***Significant difference between males and females, $p < 0.001$

**Significant difference between males and females, $p < 0.01$

*Significant difference between males and females, $p < 0.05$

About 0.6% ($N=51$) of the full sample reported 3+ DSM gambling symptoms during the past year and about 0.3% ($N=27$) reported 5+ DSM gambling symptoms during the past year. Table 2 shows gender stratified prevalence rates for gambling-related problems reported by individuals who participated in various types of gambling. Individuals who participated in spread betting and used virtual gaming machines had the highest likelihoods of reporting any DSM gambling symptoms during the past 12 months, as well as reporting 3+ DSM gambling symptoms during the past 12 months. These types of games also were associated with the highest mean numbers of DSM gambling symptoms and mean number of types of gambling during the past year (i.e. involvement).

The top five prevalence rates of any DSM gambling symptoms by types of game were: virtual gaming machines, spread betting, casino table games, other sports betting and betting on dogs. The top five prevalence rates of 3+ DSM gambling symptoms by the type of game were: spread betting, virtual gaming machines, other types of betting, casino table games and betting on dogs. The top five types of games for the mean number of DSM gambling symptoms were: spread betting, virtual gaming machines, casino table games, Internet gambling and betting on dogs. The top five types of games for the mean number of types of gambling during the past year (i.e. involvement) were: spread betting, virtual gaming machines, casino table games, internet gambling and other sport betting.

Predicting gambling-related problems

In this section, we use 'predict' in a technical sense to indicate a relationship between the logistic regressions 'predictor' variables and outcome (see reference 14, pp. 623–4), and not to suggest these predictor variables cause gambling problems. Among the full sample, participants engaged in an average of 1.67 types of gambling ($SD=1.93$) in the past 12 months. About 62% reported gambling in the past year. Among gamblers (i.e. those participants who engaged in at least one type of gambling in the past 12 months), that average increased to 2.47 ($SD=1.88$).

Table 3 shows a series of logistic regressions illustrating how well each type of gambling contributes to the prediction of

Table 2 Prevalence of any gambling symptoms, prevalence of disordered gambling, mean gambling symptoms and involvement for gamblers who played each type of gambling (weighted $N=8968$)

Type of gambling	N (weighted)			Percentage of weight/any gambling symptoms			Percentage of weight/ 3+ gambling symptoms (disordered gamblers)			Mean no. of gambling symptoms			Mean no. of types of gambling (involvement)		
	F	M	Total	F	M	Total	F	M	Total	F	M	Total	F	M	Total
National lottery	2398	2400	4798	5.9	10.3	8.1	0.4	1.6	1.0	0.08	0.18	0.13	2.31	2.91	2.61
Scratch cards	866	771	1637	7.4	13.9	10.4	0.9	3.0	1.9	0.12	0.28	0.19	3.38	4.48	3.90
Other lottery	495	467	962	7.5	10.7	9.0	1.4	2.8	2.1	0.13	0.24	0.19	3.34	4.34	3.82
Football pools	66	207	273	12.1	15.9	15.0	1.5	4.3	3.7	0.18	0.37	0.32	4.23	5.30	5.05
Bingo	431	178	609	8.3	17.4	11.0	1.6	6.7	3.1	0.14	0.50	0.25	3.63	5.02	4.04
Fruit/slot machines	427	767	1194	8.2	13.8	11.8	1.6	3.3	2.7	0.15	0.30	0.25	4.14	4.75	4.53
Virtual gaming machines	56	157	213	16.1	30.8	26.9	5.4	13.4	11.3	0.48	1.04	0.89	6.37	7.30	7.05
Casino table games	81	245	326	11.1	19.0	17.1	1.2	6.5	5.2	0.15	0.51	0.42	5.28	6.23	6.00
Internet gambling	127	354	481	11.0	16.9	15.4	2.4	5.9	5.0	0.22	0.50	0.42	5.20	5.79	5.63
Betting on horses	565	891	1456	6.4	12.6	10.2	0.7	2.5	1.8	0.10	0.26	0.20	3.70	4.43	4.15
Betting on dogs	137	286	423	8.0	19.9	16.1	1.5	7.0	5.2	0.12	0.57	0.42	4.74	5.64	5.35
Other sports betting	126	405	531	12.7	18.1	16.8	1.6	4.7	4.0	0.20	0.44	0.38	5.24	5.71	5.60
Spread betting	9	49	58	11.1	29.2	26.3	11.1	16.3	15.5	0.53	1.14	1.05	10.54	8.60	8.89
Private betting	275	580	855	9.5	14.5	12.9	1.5	2.8	2.3	0.15	0.31	0.26	4.18	4.97	4.72
Other type of betting	15	23	38	0.0	13.0	7.9	0.0	8.7	5.3	0.00	0.51	0.31	3.14	4.73	4.10
Any gambling	2726	2801	5527	5.6	10.2	7.9	0.4	1.5	0.9	0.07	0.17	0.12	2.23	2.82	2.53

F=female; M=male; 541 participants did not answer DSM questions and thus were not included in this table

Table 3 Logistic regression analyses predicting disordered gambling status from type of game, with and without controlling for involvement

Type of game	Odds ratio (95% CI), no control	Odds ratio (95% CI), controlled for involvement	Change in odds ratios	Involvement odds ratio (95% CI)
Spread betting	21.84 (9.91, 48.10)***	0.70 (0.21, 2.28) NS	-21.14	1.58 (1.44, 1.74)***
Virtual gaming machines	24.01 (13.62, 42.32)***	4.26 (1.85, 9.84)**	-19.75	1.38 (1.24, 1.53)***
Internet	9.58 (5.50, 16.71)***	1.53 (0.69, 3.38) NS	-8.05	1.50 (1.36, 1.66)***
Betting on dogs	9.39 (5.36, 16.47)***	1.95 (0.95, 3.97) NS	-7.44	1.49 (1.36, 1.62)***
Casino table games	8.15 (4.50, 14.74)***	0.79 (0.33, 0.91) NS	-7.36	1.58 (1.43, 1.75)***
Other sports betting	6.60 (3.75, 11.60)***	0.77 (0.34, 1.74) NS	-5.83	1.59 (1.44, 1.75)***
Fruit/slot machines	5.75 (3.27, 10.10)***	1.19 (0.58, 2.47) NS	-4.56	1.53 (1.40, 1.68)***
Other betting	7.24 (1.90, 27.58)**	2.93 (0.60, 14.43) NS	-4.31	1.55 (1.43, 1.67)***
Football pools	4.56 (2.24, 9.29)***	0.44 (0.16, 1.21) NS	-4.12	1.62 (1.48, 1.78)***
Bingo	4.92 (2.78, 8.72)***	1.76 (0.90, 3.42) NS	-3.13	1.52 (1.40, 1.65)***
Private betting	3.36 (1.90, 5.90)***	0.36 (0.16, 0.84)*	-3.00	1.69 (1.52, 1.86)***
Scratch cards	3.91 (2.22, 6.88)***	1.09 (0.56, 2.13) NS	-2.82	1.54 (1.42, 1.68)***
Betting on horses	2.77 (1.60, 4.80)***	0.46 (0.22, 0.97)*	-2.31	1.64 (1.50, 1.80)***
Other lottery	3.00 (1.70, 5.28)***	0.85 (0.43, 1.71) NS	-2.15	1.57 (1.44, 1.70)***
National lottery	1.85 (0.66, 5.19) NS	1.04 (0.36, 3.00) NS	-0.81	1.55 (1.44, 1.67)***

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$; NS = not significant

gambling-related problems (i.e. 3+ DSM-IV criteria). Bivariate analyses showed that all types of gambling, except for the National Lottery, contributed significantly to the prediction of gambling-related problems and all increased risk for gambling-related problems. The top five odds ratios were for: virtual gaming machines, spread betting, Internet gambling, betting on dogs, and casino table games.

Subsequent regressions that added involvement (i.e. number of types of games played in the past 12 months) showed that involvement contributed significantly to the prediction of gambling-related problems in all models. The addition of involvement greatly reduced the contribution of games to the prediction of gambling-related problems in each model. For almost all games, the addition of the involvement variable rendered the significant positive association between gambling type and gambling-related problems non-significant. The exception was virtual gaming machines, which maintained a significant positive relationship to disordered gambling status after adjusting for involvement. Two games, private betting and betting on horses, had a reversal of association. After controlling for involvement, individuals who engaged in private betting or betting on horses were significantly less likely to have gambling-related problems than people who did not.

Discussion

In this study, we provide a comprehensive analysis of participation with different games among British residents aged 16 and older. We placed a special emphasis on the nature and strength of the associations between types of games and gambling-related problems. The types of games that had the strongest associations with gambling-related problems did not include all of the games that the conventional wisdom might expect. For example, fruit/slot machines were not included among the top five game types for gambling-related problems. Virtual gaming machines had the strongest association with gambling-related problems, but few people (i.e. 2.6%) endorsed that they had played these games during the past 12 months. These findings suggest that popular perceptions of risk associated with specific types of gambling for the development of gambling-related problems might misrepresent actual risk.

Regardless of the type of game, past 12-month participation was associated with disordered gambling; however, for the most part, such associations disappear, or at least become weakened, when statistical analyses control for the range of

gambling involvement. Our findings with a primarily adult British sample are consistent with Welte *et al.*'s (2009) results for US youth. Taken together, these two sets of findings suggest that researchers and others use caution when interpreting results showing that people who play specific types of games have a higher rate of gambling-related problems than others. In fact, these studies reveal that some games might be indicators of unhealthy involvement, rather than critical factors for gambling-related problems themselves.

One interesting, and perhaps unanticipated, finding was that the nature of the relationships between private betting and betting on horses and gambling problems changed when we considered the influence of involvement: engaging in these types of gambling, but not other types, seemed to protect players against developing gambling problems. This finding suggests that the apparent risk between gambling activities and developing gambling-related problems resides, perhaps primarily or even entirely, among individuals who have high rates of involvement. For others who do not have high rates of involvement, playing these types of games might reflect social setting characteristics (e.g. norms) that encourage control and preclude excessive gambling.

These findings hold some disparate possibilities for theories of gambling exposure. On one hand, these findings might imply that more opportunities to gamble create more opportunities for involvement and, therefore, might yield more gambling-related problems. On the other hand, these findings might suggest that more opportunities to gamble will have little to no impact on the prevalence and incidence of gambling-related problems because individuals are more or less prone to involvement. Increases in gambling opportunities will not influence individuals who are less prone to involvement, but only those likely to become, or who already are, involved. There is some evidence to support the latter view because the rate of gambling disorders has changed little during the past 35 years despite the extraordinary growth of gambling opportunities and access around the world.¹⁵

Strengths and weaknesses of the study

Notable strengths of this study include the analysis of multiple game types simultaneously and the incorporation of a measure of involvement into analyses that examine the association between type of game and gambling-related problems. Controlling for involvement allows a more sophisticated

understanding of the risk unique to some types of games and provides a level of analytic sophistication more advanced than the majority of available research.⁷ By controlling for involvement, this research shows that involvement is a potent predictor of gambling-related problems that exceeds the potency of types of games. In fact, controlling for involvement drastically reduces the ability of games to discriminate statistically individuals who have gambling-related problems from those who do not. Another strength of this study is that it advances this more sophisticated methodology and line of inquiry from a US adolescent sample to a British primarily adult sample. This broader study sample helps to avoid problems related to legal access to different types of gambling observed among the US sample and concerns about different gaming interests by age cohorts.

Nevertheless, this study is not without limitations. First, the analyses rely on self-report data and not actual gambling activity. Self-report is vulnerable to weaknesses, including faulty memory, factual errors and self-presentation biases. Second, we only included one measure of involvement (i.e. number of types of games played during the past 12 months). Other measures of involvement (e.g. intensity of play, involvement in clusters of games, etc.) might provide weaker or stronger attenuation of the association between types of games and gambling-related problems. Third, this study relied on retrospective reports of behavior and therefore cannot establish any causal patterns. Fourth, many of the game-type variables represent multiple types of games by definition (e.g. casino table games, internet gambling, etc.). This approach is conservative and only presents as a limitation because of the inability to distinguish the effects of subtypes of games. Fifth, a small number of people played some types of games; consequently, increases in the sample size might alter the findings for games played by small numbers of people.

Future research should include the longitudinal assessment of real-time gambling data and multiple measures of involvement to yield a better determination of whether involvement is a moderator, mediator or both, of disordered gambling. Other important directions include examinations of game clustering, to determine whether subtypes of involvement are possible, the determination of whether there might be a critical level of involvement (e.g. 5 types, 10 types) that has optimal sensitivity and specificity for determining disordered gambling status and, finally, a consideration of age-related effects.

Concluding thoughts

The range of gambling involvement frequently is a better predictor of disordered gambling status than type of gambling. This finding is important because it represents a deviation from the tendency to focus on specific games, such as fruit/slot machines as central to gambling-related problems. This research does not suggest that differentiating between types of games is completely unimportant; clearly, there are differences in the popularity of games. These and similar results⁷ suggest the need to reconsider the conventional assumptions related to the influence of game types and direct more attention toward global behavioral characteristics, such as the range of involvement.

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Conflict of interest: During the past 5 years, the authors of this paper have received honoraria and fees for a variety of activities, including gambling-related symposia, speaking events, education events, research, and consulting. HJS has served as an expert witness for gambling and other addiction-related legal cases. The authors have no other personal or employment-related competing interests. The sponsor had no role in this research. We conducted this research independently from the sponsor.

Key points

- The aetiology of PG is uncertain, but research has attempted to determine whether specific game types (e.g. slot machines, internet gambling) are associated with increased risk for developing disordered gambling.
- Recent research suggests that past findings linking game types to risk for disordered gambling failed to consider the range of gambling involvement among people who play specific games and when the extent of involvement is considered, game type influences diminish. Nevertheless, this recent research is limited by its reliance on a US youth sample.
- The current study extends recent research by testing the associations between specific games, range of involvement and disordered gambling among a nationally representative British adult sample.

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