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Trends and Patterns in UK Treatment Seeking Gamblers: 2000-2015

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ABSTRACT

Background and Aims

Gambling is an activity that for some can become disordered, with severe negative consequences. Existing literature does little to inform us regarding changing gambling habits of treatment seeking gamblers; the current study sought to measure trends and patterns in UK treatment seeking gambler behaviour and demographics over a 15-year period.

Methods

Case files for 768 gamblers seeking residential treatment with the Gordon Moody Association (GMA) were analysed, collected between 2000 and 2015. Case files comprised initial assessment questionnaires, demographic data, current gambling behaviour, mental and physical health status, and a risk assessment. Chi-squared analyses were used to measure change in categorical distribution.

Results

Prevalence of different forms of gambling identified as problematic have changed over time: Fixed Odds Betting Terminals (FOBTs), sports betting, and poker have become more common; horse and dog racing, and the National Lottery have become less common. Online gambling has also increased over time. In more recent years, gamblers are also more likely to have attempted suicide, to report a co-occurring mental health disorder, and to start treatment having already been prescribed medication.

Discussion and Conclusions

This is the first study to demonstrate that UK treatment seeking gambler behaviour has changed over time; major changes relate to the forms of gambling engaged in problematically, and the mental health of disordered gamblers. Whilst much media focus is directed towards one form of

gambling, this should not detract focus from other forms and associated disorders, and the impact of the legislative environment.

Keywords: ***gambling, disordered gambling, treatment, UK***

INTRODUCTION

Gambling in the UK

Gambling in the UK has been evolving since the implementation of the 2005 Gambling Act (2005 c 19). The 2005 act permitted marketing of gambling on TV and radio, increased betting shop opening hours, and increased the number of Fixed Odds Betting Terminals (FOBTs) allowed per shop to four. FOBTs are electronic gaming machines offering gambling at 'fixed odds', found in Bookmakers shops and casinos that offer high-stakes, high-speed gambling. Following implementation of these changes, exposure to gambling through adverts (Ofcom, 2013) and other marketing ploys (Cassidy & Ovenden, 2017) has dramatically increased, as has the number of FOBTs in bookmaker's shops (Gambling Commission, 2018). However, past-year population gambling prevalence has remained relatively constant (Wardle *et al,* 2011; Conolly *et al,* 2017), yet gamblers are now spending record amounts of money. The gross gambling yield between April 2016 to March 2017 was £13.7 billion, a 1.8% increase on the previous year (Gambling Commission, 2017). Past year gambling engagement since 2000 has increased in scratchcards, other lotteries, betting on other events and sports, FOBTs, and gambling on online bingo, casino or slot machine games, whilst betting on Football Pools has decreased (Wardle *et al,* 2011). The use of the internet to access gambling is also increasing (Conolly *et al,* 2017). Despite this, the prevalence of disordered gambling at population level in the UK has remained at less than 1% (Wardle *et al,* 2011; Conolly *et al,* 2017).

Co-morbid behaviour and gambling related harm

Disordered gambling is associated with adverse health outcomes. Kessler *et al,* (2008) reported that 96% of lifetime pathological gamblers met diagnostic criteria for at least one other psychiatric disorder. In the UK, elevated psychiatric comorbidity, and poor mental and physical health have

been observed in both population level studies (Cowlishaw & Kessler, 2015), and treatment seeking samples (Ronzitti *et al,* 2016). Individuals with gambling disorders have been shown to experience elevated levels of mood and anxiety disorders (Petry *et al*, 2005; Specker *et al,* 1996; Toneatto & Pillai, 2016), and major depressive disorders (Zimmerman *et al,* 2006).

Previous research has established a relationship between smoking and gambling in adults (McGrath & Barrett, 2009), and elevated levels of smoking amongst gamblers (Black *et al,* 2013). Additionally, tobacco dependence was found to be the most prevalent co-occurring psychopathology amongst disordered gamblers (Lorains *et al,* 2011). Disordered gamblers also demonstrate an increased risk of alcohol use disorders (Cunningham-Williams *et al.,* 1998; Welte *et al.,* 2001) and are at increased risk of gambling relapse (Hodgins *et al,* 2010) than gamblers without a co-morbid alcohol use disorder. Gambling is also associated with excessive substance use and substance use disorders (Barnes *et al,* 2015; Petry, 2007). Lorains *et al* (2011), report in their meta-analysis that 57.5% of gamblers had a co-occurring substance use disorder, whilst a recent meta-analysis of risk and protective factors identified cannabis use and illicit drug use as risk factors for gambling problems (Dowling *et al,* 2017).

Treatment seeking gamblers have also report high levels of suicidal ideation and suicide attempts (Ledgerwood & Petry 2004; Battersby *et al* 2006). Petry & Kiluk (2002) report suicidal ideation in 32%, and suicide attempts in 17% of a gambling treatment seeking sample and found that gamblers with suicidal ideation had higher SOGS scores. In the UK, a recent study utilising a large clinical sample indicated that 46% of individuals with gambling problems reported current suicidal ideation (Ronzitti *et al,* 2017).

Aims and rationale

The current paper analysed a large database of treatment seeking disordered gamblers, to identify behavioural trends and patterns both before and after implementation of the 2005 Gambling Act. Due to the changes in patterns of engagement in specific forms of gambling at population level, it is

hypothesised that forms of gambling engaged in by treatment seeking gamblers will also vary. Although it would be expected that gamblers would drink, smoke and use substances more than the general population, there is no empirical evidence to suggest this will change over time. Thus, it is hypothesised that use of smoking, alcohol or drugs will not vary significantly over time in this treatment seeking population. Furthermore, although previous research suggests the study might observe elevated psychiatric disorders, there is no empirical evidence to justify a directional hypothesis regarding prevalence over a specific time. Therefore, an exploratory analysis will be conducted. This analysis represents, to the authors' best knowledge, the first analysis of treatment seeking gambler data over time, allowing novel patterns in demographic and behavioural patterns to be presented and discussed, significantly adding to the literature on treatment seeking gamblers in the UK.

METHODS

Participants

The Gordon Moody Association provide the UK's only gambling-specific residential treatment facility, with two sites in South London and the West Midlands. Data was collected from all applicants to GMA between January 2000 and November 2015 (*n* = 768, M= 48 per year). Due to the residential nature of the treatment, GMA residents were until recently, all male. The age of applicants ranged from 17 to 70 (M = 34.82, *s.d.* 9.98). Of those who reported their ethnicity *(n* = 744*),* 88% (*n* = 654) identified as being with White, White Irish, or White Other. Overall, 48.7% of the sample had children; 31.1% suffered from mental ill health, with depression the most common disorder (22.6%). Living with family was the most commonly identified current accommodation (30.7%), followed by private rented (15.9%) and sleeping rough (10.7%). The most common highest educational attainments were GCSE /O Level (24%). No educational qualifications were reported by 17.8% of the sample.

Gambling severity was assessed either using the South Oaks Gambling Screen (SOGS) (Lesieur & Blume, 1987), and/or the Problem Gambling Severity Index (PGSI, Ferris & Wynne, 2001) (SOGS: n = 439, M= 15.8, *s.d.* 2.6; PGSI: n = 155, M= 22.5, *s.d.* 3.9). The mean number of gambling activities engaged in was 4.58 (*s.d.* 2.88, range 1-18, *n* = 739). Drinking at levels which exceed recommended safe consumption levels (>14 units per week, Department of Health, 2016) was evident in 33.6% of the sample, 61.6% were current smokers, and 23.6% disclosed recreational or habitual use of non-prescription drugs.

Measures and procedure

As part of a larger clinical assessment, individuals completed service specific measures including a gambling audit for gambling behaviour: age of first use, main types of gambling, amount of gambling in the past year, and amount of money lost gambling in the past week, month and year. Individuals also completed a need audit (questioning illness and disability, mental health, physical health, current medication, and the individual's self-reported use of both alcohol and non-prescription drugs), and a safety audit (including questions about circumstances that could lead to verbal aggression, physical aggression, and property damage). Participants were also asked questions about any previous criminal activity, and whether they had previously self-harmed or attempted suicide.

Audits were completed in a one-to-one session with a member of GMA staff. Answers to questions on the need and safety audits were generally on a four-point Likert scale, (e.g. Do you use solvents or drugs (other than those prescribed by a doctor); never, sometimes, most of the time, always) or a yes / no binary, (e.g. Do you suffer from mental ill health?). Where required, a text box was provided for further elucidation. For further details of the clinical assessment and the service specific measures, see supplementary material.

Statistical analysis

Case files for all individuals going through the initial assessment process at GMA were electronically redacted to ensure anonymity. Data from case files was then coded in to SPSS. Where required, new variables were derived to allow analysis (see supplementary material for details).

Chi-square (dichotomous x ordinal), and Somers' *d* (ordinal x ordinal) were used to analyse ordinal distribution across intake years. Distribution patterns across single variables (i.e. for specific forms of gambling) were analysed using non-parametric chi-square tests. ANOVAs were utilised where the data were continuous. The Kolmogorov-Smirnov (K-S) test for normal distribution was applied; caution was taken interpreting the K-S test due to the large sample size, however where data were non-normally distributed a square root transformation was applied to ensure skew and kurtosis were within normal parameters.

Ethics

The study was approved by the University of Lincoln School of Psychology Research Ethics Committee (SOPREC, Ref: PSY1415127). When submitting an initial application, the applicant agreed to all information provided being used to facilitate the development and improvement of service provision through statistical analysis.

RESULTS

Forms of gambling

Analysis indicated that overall, forms of gambling identified as problematic at treatment start varied by intake year (χ^2 (90) = 582.99, p<.001), driven by significant increases in the proportion of gamblers identifying FOBTs (χ^2 (13) = 108.58, p<.001), Other Sports (χ^2 (15) = 69.68, p<.001), and Poker (χ^2 (10) = 35.28, p<.001) as problem forms (Fig. 1). Use of the internet as a means of accessing gambling increased significantly across intake year (Fig.1), (χ^2 (14) = 156.51, p < .001).

Results indicate significant decreases in the proportion of gamblers identifying Dog Racing (χ^2 (15) = 75.65, p<.001), Horse Racing (χ^2 (15) = 52.26, p<.001), and the National Lottery (χ^2 (11) = 48.18, p<.001) as problem forms (Fig.2).

The proportion of individuals identifying Slot/Fruit Machines (χ^2 (15) = 49.06, p<.001), Casinos (χ^2 (15) = 30.94, p<.05) and Scratchcards (χ^2 (10) = 20.33 p<.05) as a problem form also varied significantly by intake year, however did not show any discernible pattern. The proportion of individuals identifying Spread Betting (χ^2 (9) = 4.88, p>.05), and the use of Betting Exchanges (χ^2 (6) = .46, p>.05) did not vary significantly by intake year.

Health, mental health and substance use

The proportion of individuals who reported attempting suicide varied significantly by intake year (χ2 (14) = 38.44, p < .001). A higher proportion of individuals entering treatment had attempted suicide in more recent intake years. Instances of suicidal thoughts did not vary by intake year (χ2 (15) = 16.5, p>.05).

The proportion of individuals who reported any mental health disorder (not including gambling disorder) (χ^2 (15) = 31.99, p< .01), and the proportion of individuals arriving for treatment taking prescribed medication varied significantly by year (χ2 (15) = 69.27, p < .001), with prevalence of both mental health disorders and medication prescription increasing with time. The proportion who reported any physical health disorders did not vary significantly by intake year (χ^2 (15) = 17.26, p>.05), (Fig. 3).

The proportion of individuals who reported smoking tobacco (χ^2 (15) = 35.18, p<.01), or using drugs (χ^2 (15) = 50.17, p <.001) varied significantly by intake year, however did not show a consistent noticeable increase or decrease across intake years. The proportion who reported drinking alcohol did not vary significantly (χ^2 (15) = 24.04, p> .05) (Fig.4). Alcohol use was more common than smoking, which was in turn more common than drug use across intake years.

DISCUSSION

The current research sought to analyse trends and patterns in the profile and behaviour of individuals seeking treatment for gambling problems at a UK residential treatment centre between 2000 and 2015. Overall, forms of gambling identified as problematic at treatment start varied by intake year, driven predominantly by increases in FOBT use, other sports gambling, and poker, and decreases in dog racing, horse racing, and the National Lottery. The use of the internet as a means of accessing different forms of gambling increased significantly over intake years. The percentage of individuals who reported any mental health disorder (not including gambling disorder) and those who commenced treatment on medication both increased significantly over time. The percentage of individuals who reported attempting suicide increased significantly by intake year; a higher proportion of individuals entering treatment had attempted suicide in more recent intake years.

Forms of gambling

The forms of gambling identified by individuals entering treatment varied significantly by intake year, driven by increases in those identifying FOBTs, sport betting, or poker as a problem form, and decreases in those identifying dog racing, horse racing, and the National Lottery as a problem form. Whilst an increase in the number of people engaging with a specific form of gambling might naturally lead to more people engaging problematically, the co-occurring decrease in the proportion of individuals reporting other forms suggest that the structure, availability and marketing of some types of gambling activities may encourage problematic engagement with some forms more than others.

The recent increase in sports gambling could be a consequence of the legislation surrounding gambling marketing. In the UK, live televised football is now saturated with gambling marketing, with approximately 95% of live football coverage featuring a gambling advert (Christie, 2017), and between 71 and 89% of screen time on Match of the Day, (the major terrestrial TV premier league highlights show) featuring gambling branding (Cassidy & Ovenden, 2017). Adverts have been shown

to have a significant impact on at-risk and problem gamblers, particularly in-play sports betting adverts (Hing *et al,* 2014; 2017), whilst the increased exposure to gambling marketing normalises gambling behaviour within a professional sports context, particularly in children (Pitt *et al.,* 2016; Thomas *et al.,* 2016)

The number of gamblers identifying FOBTs as a problem form in this sample is increasing. Previous research has indicated that accessibility is an influential factor in the development and maintenance of disordered gambling (St-Pierre *et al,* 2014). Recent Gambling Commission figures indicate there are 8502 Betting Shops in the UK housing a total of 33,496 'gaming' machines, 33,420 of which are FOBTs offering B2 content (Gambling Commission, 2018). These figures demonstrate that if a gambler is in a bookmaker's and wants to play a machine, the most likely available option will be an FOBT. Furthermore, FOBTs offer high stakes at high speeds, currently £100 every 20 seconds; high speed games are reported to be particularly appealing to problem gamblers (Harris & Griffiths, 2017). It can therefore be argued that the saturation of betting shop machine distribution by high-stake, fast-speed FOBTs makes these the most accessible and appealing forms of gambling machine available, which could be an influential factor in the increase in gamblers reporting FOBTs as a problem form.

The current data also indicate that poker is becoming an increasingly commonly identified problem form. Over the last decade, online poker has become one of the fastest growing forms of gambling (Biolcati, Passini & Griffiths, 2015). The increase in popularity in poker, particularly online, is thought to have been influenced by different factors including accessibility and opportunity, and celebrity endorsement, (Griffiths *et al,* 2010). Furthermore, online poker players are at higher risk for developing gambling problems (Szabó & Kocsis, 2012). Although data in the current study does not indicate whether those identifying poker as a problem form played online or offline, the concurrent increase in both poker and online gambling raise some interesting questions that can be addressed in subsequent research.

Results from this study also indicate that the use of the internet as a means of accessing different forms of gambling increased significantly over intake years. Increased internet coverage and an explosion of new gambling sites have increased availability; increased accessibility of gambling can be considered an important factor in the development and maintenance of gambling problems (Gainsbury, 2015). General population and treatment seeker data are reflective of Gambling Commission figures that show the remote gambling sector is the largest and fastest growing sector industry wide (Gambling Commission, 2017), indicating that modes of engagement, in addition to research on specific forms of gambling, should also be an avenue for future research.

Health, mental health, and suicide

The current data indicated attempted suicides increased significantly by intake year, with a higher proportion of individuals entering treatment reporting at least one suicide attempt in more recent intake years. Elevated levels of suicide attempts in the current treatment seeking sample replicate previous work that reports high rates of suicidality in pathological gamblers (Petry & Kiluk, 2002; Ledgerwood & Petry, 2004; Ronzitti *et al,* 2017). Individuals reporting that they had experienced suicidal thoughts did not vary by intake year, yet instances of suicide attempts are increasing; it can be implied from these findings that across time, gamblers who experience suicidal thoughts appear to have become more likely to act on those thoughts.

Furthermore, the proportion of individuals who reported any mental health disorder increased significantly over time, rising sharply between 2011 (25%) and 2015 (50%). The most common mental health disorders identified were depression and anxiety, in accordance with previous research (Cunningham-Williams *et al,* 1998; Toneatto & Pillai, 2016). Increasing proportions of individuals reporting a co-occurring mental health disorder could indicate that the mental health of treatment seeking gamblers is deteriorating. However, an increased awareness of mental health disorders within males could make such disorders more likely to be disclosed, rather than more likely to be experienced. Furthermore, the proportion of individuals presenting for treatment on

medication has also significantly increased over time. The most common medication type that had been prescribed was anti-depressants. However, it is unknown as to whether the medication was prescribed in response solely to the symptoms presented by the individual, or to address the underlying gambling pathology.

Comorbid substance use

The proportion of individuals who reported smoking tobacco and the proportion who reported using other drugs varied significantly by intake year, however there was not a consistent pattern across intake years. The proportion of those reporting drinking alcohol did not vary over time. Mean prevalence of substance use was higher in the study cohort than in national level prevalence (smoking, 63% compared to 15.8% (Office for National Statistics (ONS), 2017a), recreational drug use 23.8% compared to 8.4% (NHS, 2017), and alcohol use 74.4% in the current sample compared to 56.9% (ONS, 2017b)), in line with previous research (McGrath & Barrett, 2009; Black *et al,* 2013; Barnes *et al,* 2015) and indicating that gamblers may be more likely to engage in other risky behaviours outside gambling.

Limitations

Although the current study was robust enough to allow presentation of important results, data collection across an extended time unavoidably faces challenges. Data was collected somewhat sporadically across different sites, whilst categorisation for some variables was altered across time, making aggregation and analysis impossible. The current study was able to examine a relatively large sample of treatment seeking gamblers, however as the data was collected over an extended time, the number of gamblers per year was, on average, 48. Analyses were only performed on variables with sufficient cell counts, as it was not possible to conduct meaningful analyses on all categorical variables within each year as cell counts were too low. Furthermore, it is acknowledged that this sample represents the most severe problem gamblers, that have been accepted into the GMA programme, and as such, may not be representative of all problem, and at-risk gamblers. Therefore,

although results indicate some interesting patterns, conclusions must be drawn with caution. With the number of disordered gamblers in the UK thought to be approaching 500,000, research of this kind is not limited by a lack of treatment seeking gamblers, rather by the limits on the provision of support/treatment services available to treat and manage such individuals. Finally, analyses are restricted to male gamblers. It is unknown if these results are male-gambler specific, or generalisable to all gamblers. Data was available for an insufficient number of female gamblers to allow comparable analysis, highlighting both the lack of provision for female gamblers, and the need for more work in this neglected area.

CONCLUSIONS

Results highlight two major areas of concern and interest. The changing patterns of forms of gambling identified as a problem form indicate that FOBTs, sports betting and poker, are increasingly being reported as problematic. Perhaps of more pressing concern is the rapid increase of the internet as the medium to access gambling; the increased availability of gambling afforded by the internet, aligned with more individually targeted marketing messages based on the individual's own browsing behaviour ensure opportunity, temptation and encouragement to gamble is omnipresent. Much of the recent political and media focus has been on one specific form of gambling, FOBTs. Whilst the attention afforded to FOBTs is not without foundation, the focus should not be to the detriment of research into the concurrent increases in sports betting, poker, and use of the internet to gamble.

Perhaps of greater concern are the health-related findings. Increasing numbers of gamblers are accessing treatment reporting a co-occurring mental health disorder and are already taking prescribed medication. Additionally, each year since 2013, approximately 30% of individuals accessing treatment for gambling problems with GMA have attempted suicide prior to starting treatment. It is imperative that the gambling industry, gambling support services, and wider health

care services work together to ensure that gambling problems are identified, and support provided before the individual reaches this crisis point.

To conclude, the mental health and gambling habits of disordered gamblers in the UK are changing over time. As such, it is vital that clinical, educational and legislative approaches maintain the flexibility to respond to changes in gambler behaviour.

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Highlights

- Forms of gambling identified as problem forms have changed over time
- Increases in Fixed Odds Betting Terminals, Poker, & Sports Betting
- Decreases in Horse and Dog Racing, and the National Lottery
- Gamblers more likely to have attempted suicide in recent years
- Gamblers more likely to report a co-morbid mental health disorder in recent years

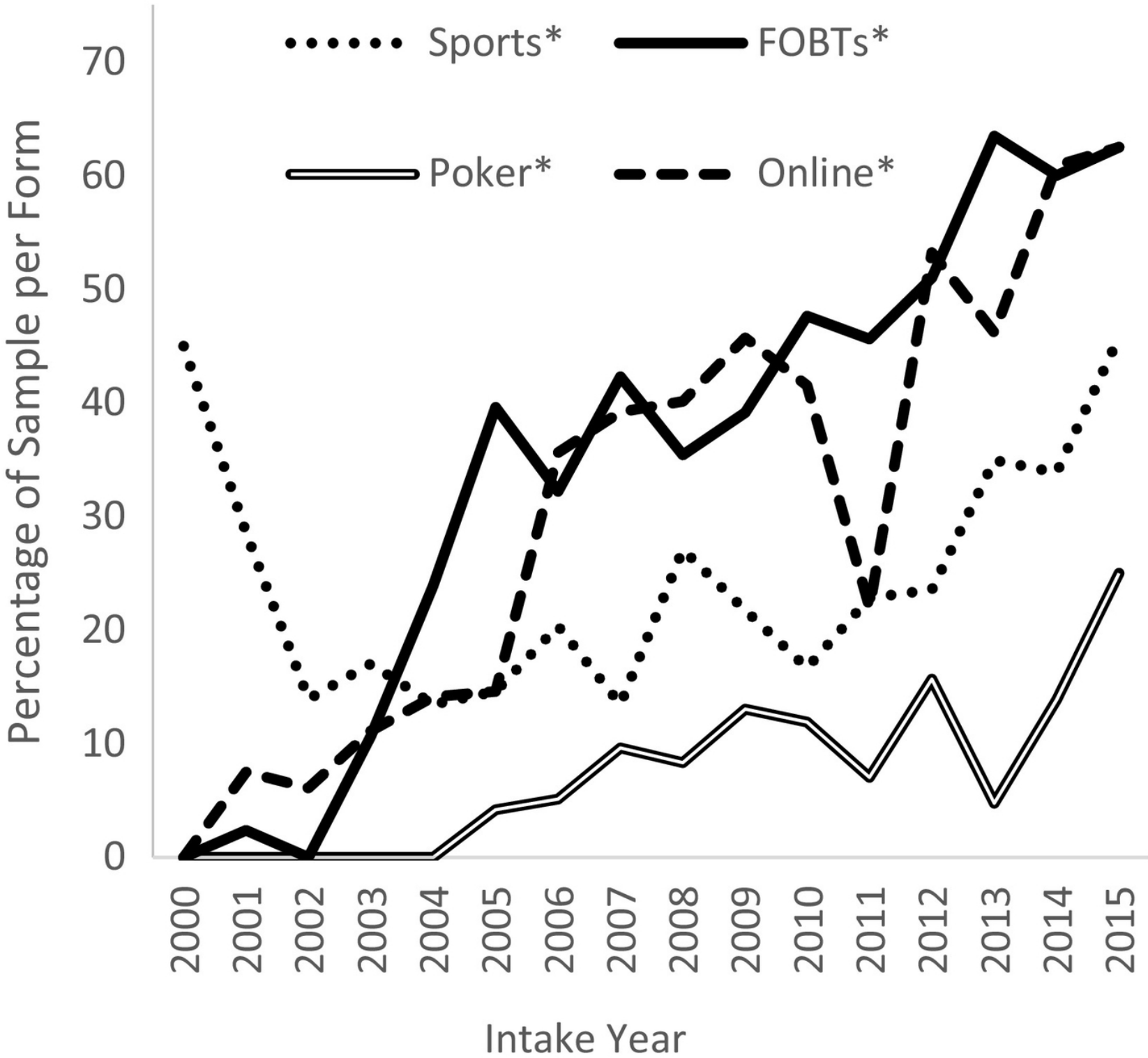
Sports*
FOBTs*
Poker*
Online*
Percentage of Sample per Form
70
60
50
40
30
20
10
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Intake Year

Figure 1

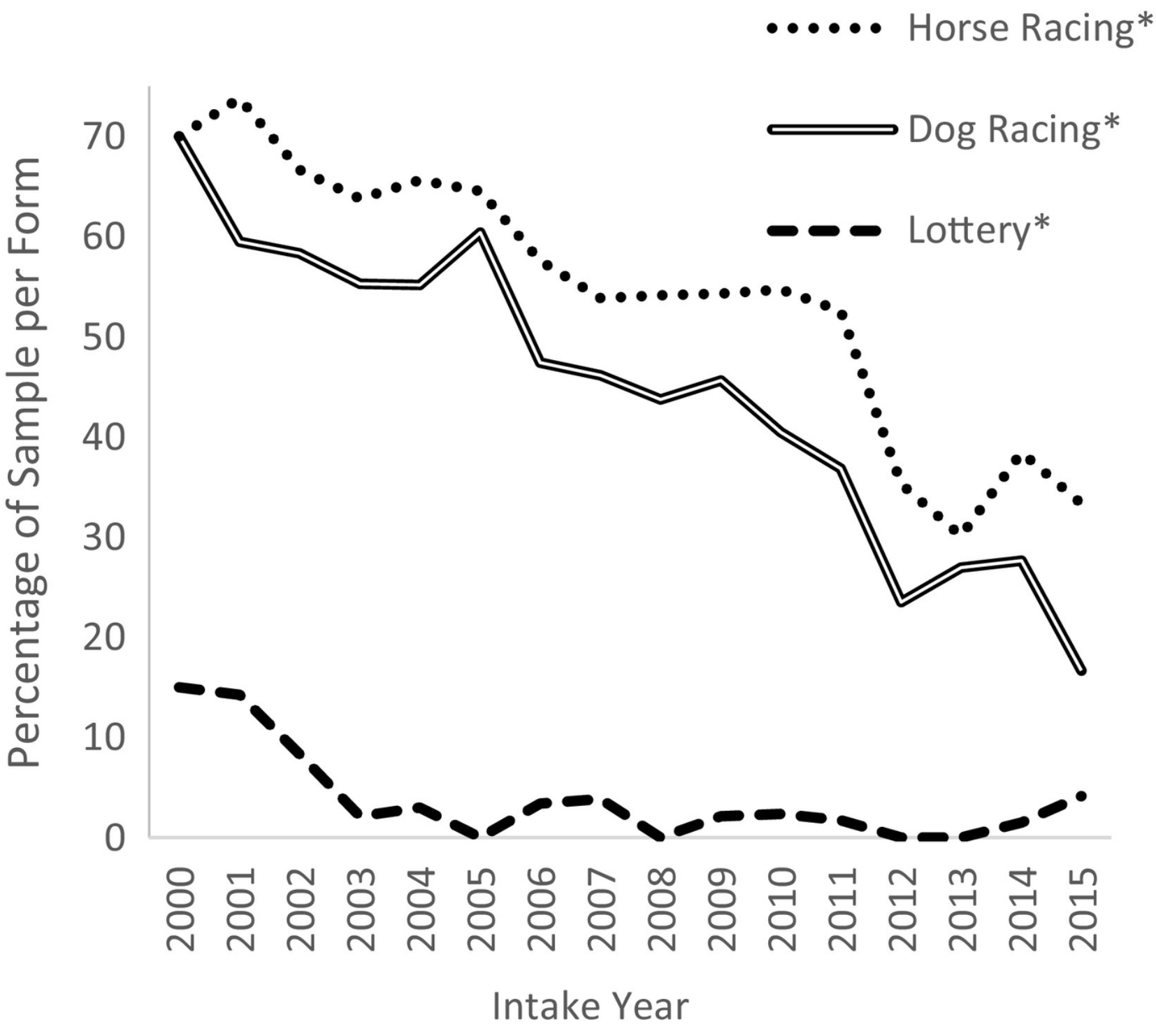
Horse Racing*
Dog Racing*
Lottery*
Percentage of Sample per Form
70
60
50
40
30
20
10
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Intake Year

Figure 2

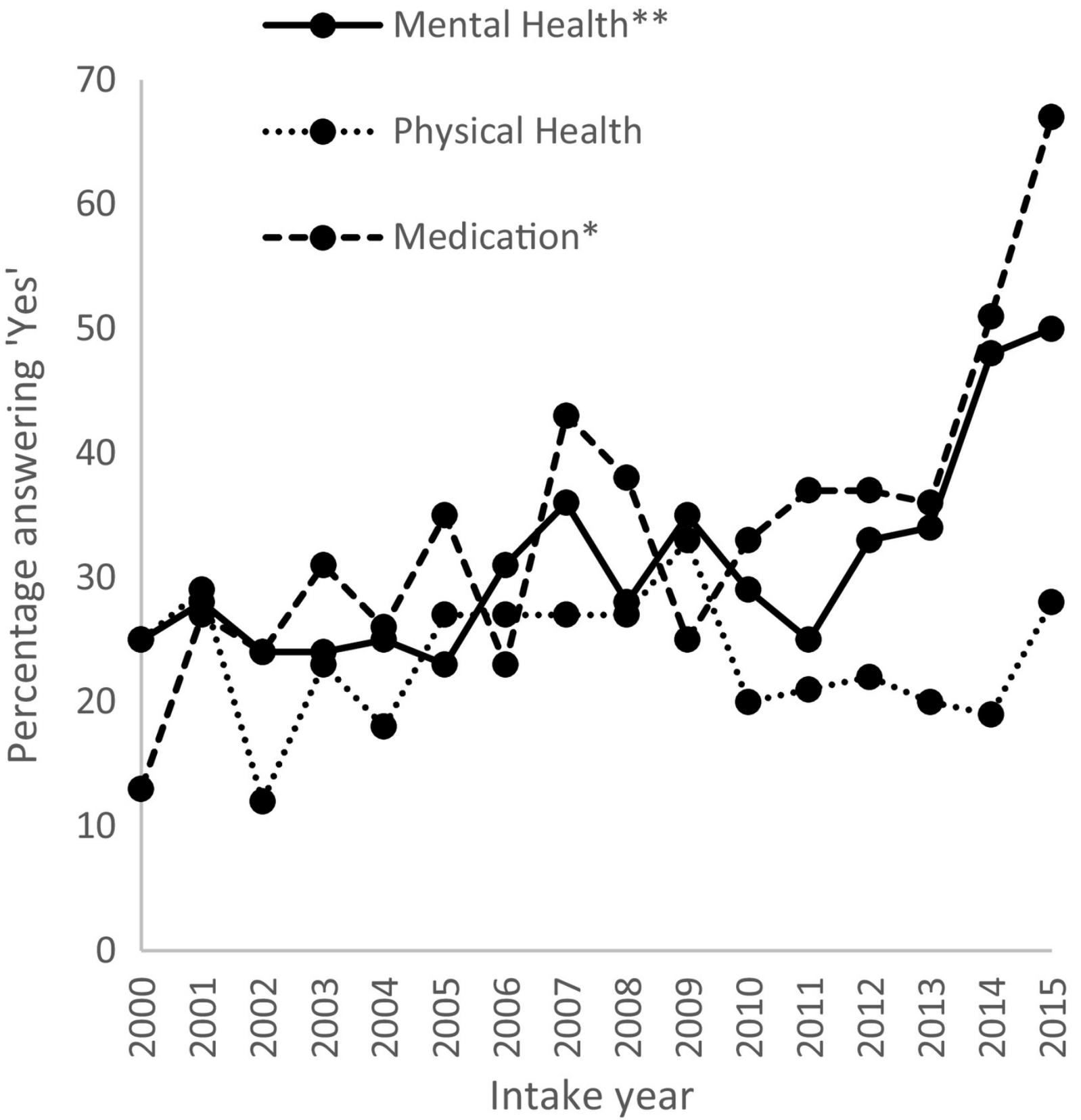
Mental Health**
Physical Health
Medication*
Percentage answering 'Yes'
70
60
50
40
30
20
10
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Intake year

Figure 3

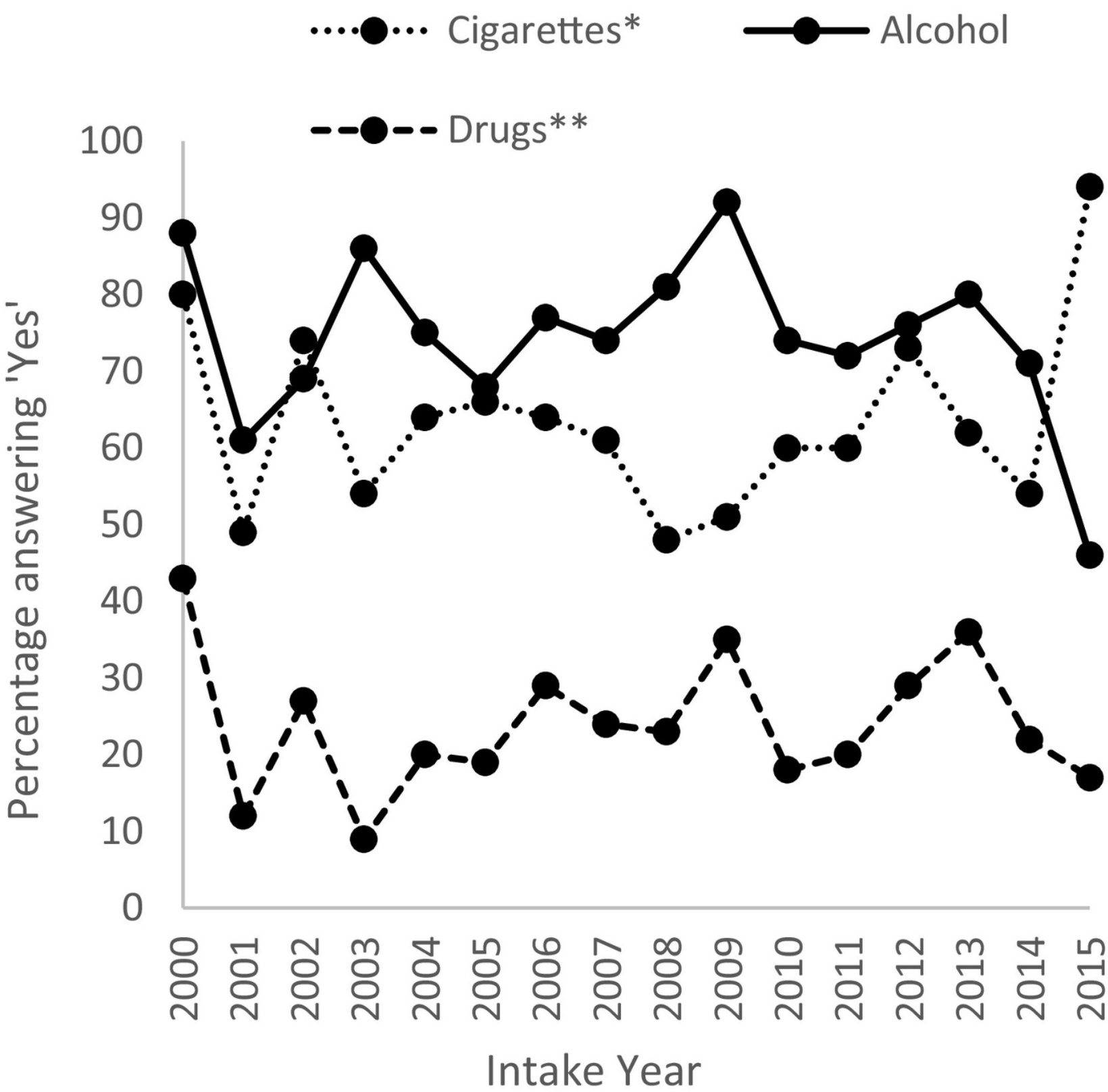
Cigarettes*
Alcohol
Drugs**
Percentage answering 'Yes'
100
90
80
70
60
50
40
30
20
10
0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
Intake Year

Figure 4