FULL-LENGTH REPORT

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Down and Out in London: Addictive Behaviors in Homelessness

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Backgrounds and aims: Problem gambling occurs at higher levels in the homeless than the general population. Past work has not established the extent to which problem gambling is a cause or consequence of homelessness. This study sought to replicate recent observations of elevated rates of problem gambling in a British homeless sample, and extend that finding by characterizing (a) the temporal sequencing of the effect, (b) relationships with drug and alcohol misuse, and (c) awareness and access of treatment services for gambling by the homeless. *Methods:* We recruited 72 participants from homeless centers in Westminster, London, and used the Problem Gambling Severity Index to assess gambling involvement, as well as DSM-IV criteria for substance and alcohol use disorders. A life-events scale was administered to establish the temporal ordering of problem gambling and homelessness. *Results:* Problem gambling was evident in 23.6% of the sample. In participants who endorsed any gambling symptomatology, the majority were categorized as problem gamblers. Within those problem gamblers, 82.4% indicated that gambling preceded their homelessness. Participants displayed high rates of substance (31.9%) and alcohol dependence (23.6%); these were not correlated with PGSI scores. Awareness of treatment for gambling was significantly lower than for substance and alcohol use disorders, and actual access of gambling support was minimal. *Discussion and conclusions:* Problem gambling is an under-recognized health issue in the homeless. Our observation that gambling typically precedes homelessness strengthens its role as a causal factor. Despite the elevated prevalence rates, awareness and utilization of gambling support opportunities were low compared with services for substance use disorders.

Keywords: gambling, homelessness, alcohol, substance abuse, vulnerable

INTRODUCTION

Homelessness involves a complex array of inter-woven contributing factors and consequences, which can include gambling, drugs, and alcohol misuse. Homelessness can often result from poverty (O'Callaghan et al., 1996). Financial hardship resulting from unemployment has previously been observed as a powerful predictor of homelessness (Kemp, Lynch, & Mackay, 2001). Recent studies have suggested that poverty can have negative psychological effects on economic decision-making, encouraging risky and short-sighted choices that can perpetuate a vicious cycle of poverty (Haushofer & Fehr, 2014). For many, gambling may be seen as an escape route from these severe financial difficulties, whereby even modest wins may have a significant impact on quality of life (Lopes, 1987).

In the most recent British Gambling Prevalence Survey (BGPS), 73% of the general adult population reported gambling in the past 12 months (Wardle et al., 2011) and 0.7% met criteria for problem gambling using the Problem Gambling Severity Index (PGSI, Ferris & Wynne, 2001). As a postal survey, the BGPS did not include various demographic sectors including the homeless, and a number of international studies have reported elevated levels of problem gambling in the homeless, in the range of 11.6–25% (LePage, Ladouceur, & Jacques, 2000; Matheson, Devotta, Wendaferew, & Pedersen, 2014; Nower, Eyrich-Garg, Pollio, & North, 2015; Shaffer, Freed, & Healea, 2002; Sharman, Dreyer, Aitken, Clark, & Bowden-Jones, 2015). In the first study to examine this in the UK, we recruited 456 homeless individuals from day centers and hostels in Westminster, London. The past year level of problem gambling on the PGSI was 11.6% (Sharman et al., 2015). Problem gambling is significantly associated with substance use, mood, anxiety, and personality disorders (Petry, Stinson, & Grant, 2005), and has been identified as a cause of homelessness in a number of qualitative studies based on interviews (Crane et al., 2005; Holdsworth & Tiyce, 2012; van Laere, de Wit, & Klazinga, 2009). However, little work has examined the temporal sequencing of gambling and homelessness using quantitative analysis.

Gambling was re-classified from an impulse control disorder to a behavioral addiction in the *Diagnostic Manual of Mental Disorders* (5th ed.; *DSM-5;* American Psychiatric

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Association, 2013), due to apparent overlap in underlying mechanisms and clinical presentation (Potenza, 2006). Past work has identified elevated rates of substance and alcohol use disorders in the homeless (Mallett, Rosenthal, & Keys, 2005; Neale, 2001; Shelton, Taylor, Bonner, & van den Bree, 2009). For example, Nower et al. (2015) found that 63% of their sample met lifetime criteria for alcohol abuse or dependence, and 60.4% met lifetime criteria for substance abuse or dependence. In a study of people sleeping rough in London, 36% were drug dependent and 25% were alcohol dependent (Fountain, Howes, Marsden, Taylor, & Strang, 2003). Notably, 47% reported that drug or alcohol problems were the major precipitant of their homelessness. In an Australian study where the overall rate of substance use disorders was 43%, one third of the sample identified substance problems as preceding their homelessness, whereas two thirds developed substance problems after becoming homeless (Johnson & Chamberlain, 2008). A further study identified substance, alcohol, and gambling disorders as the strongest predictors of homelessness in veterans (Edens, Kasprow, Tsai, & Rosenheck, 2011).

Provision of treatment for problem gambling in the UK is limited, and even when effective treatment is available, improving awareness of these services is a major goal in public health. In the 2002 National Epidemiologic Survey on Alcohol and Related Conditions (Grant et al., 2004), participants who demonstrated lifetime gambling dependence were asked about their use of treatment services for gambling, including gamblers anonymous and any other kind of recognized health professional. The combined rate for treatment seeking across all gambling services was 9.1%, indicating that less than one in ten problem gamblers had sought help for their gambling (Cunningham, 2005). This rate is lower than the corresponding rate for alcohol-related problems (Cunningham & Breslin, 2004).

Acknowledging that disordered gambling is a dimensional construct, this study sought to characterize gambling involvement in the homeless in terms of the rate of problem gambling and the distribution of PGSI risk categories. Most household surveys of gambling show a stepwise downward trend in the gambling risk categories, such that the modal group are "no risk," with diminishing number of low risk, moderate risk, and probable problem gamblers (Toce-Gerstein, Gerstein, & Volberg, 2003). In our preliminary study, the PGSI risk categories in the homeless did not follow this trend, with a sharp increase in the problem gambling category consistent with polarized behavior: homeless participants tended to either not gamble at all or endorse problematic gambling (Sharman et al., 2015). Second, we sought to understand the temporal ordering of gambling and homelessness, to inform whether problem gambling was a possible cause of homelessness, or if gambling problems occurred post-homelessness. A third aim of the study was to ascertain rates of drug and alcohol misuse, in order to investigate their relationships with gambling as another addictive behavior. Finally, we sought to identify awareness and utilization of treatment and support services to the homeless population in relation to gambling.

METHODS

Participants

Participants ($n = 72$, Mean age = 40.8, SD = 11.9, 63 males) were recruited from homeless shelters, day centers, and hostels throughout Westminster Local Authority, London, and were considered homeless if they were "rough sleeping" on the streets or in night shelters, or living in hostels or other accommodation unsuitable for long-term habitation (adapted from Fitzpatrick, Kemp, & Klinker, 2000). Data was collected via a semi-structured interview with a researcher.

Procedure

The interview sections on gambling, drugs, and alcohol were each initiated with a screening item to minimize participant burden; if the screening item was answered negatively, the rest of the section was scored as zero. If participants answered positively to the gambling screening item, they were required to complete the PGSI (Ferris & Wynne, 2001) to establish gambling involvement. If participants answered positively to the alcohol or drug use screening questions, they were required to answer questions based on the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR, 4th ed., text rev., American Psychiatric Association, 2000) to establish alcohol and drug use and abuse. Participants completed a Negative Life Events Scale (Australian Bureau of Statistics, 2002) to establish the prevalence of negative life events, and answer options were modified to indicate the temporal relationship between the life event and homelessness. Participants were not paid for their contribution.

Data classification and analysis

PGSI scores were categorized based on the modified thresholds by Currie, Hodgins, and Casey (2013) as "no risk" (score of 0), "low risk" (1–4), "moderate risk" (5–7), or "problem gambling" (>7). As only one participant fell in the moderate risk group, the low-risk and moderate-risk cells were combined [as recommended by Currie et al. (2013)]; thus the categories were "no risk" (PGSI score of 0), "low/moderate risk" (PGSI scores of 1–7), and "problem gambling" (PGSI scores of >7). For alcohol and drug use criteria, the number of DSM-IV substance use disorder items endorsed was recorded. A Pearson product-moment correlation coefficient was computed to establish the relationship between alcohol, drugs, and gambling. Chi-squared analyses were used to ascertain frequency differences between "no risk" (PGSI score of 0), "at risk" (PGSI scores of 1–7), and problem gambling (PGSI scores of >7) groups for negative life events, and treatment access per behaviour.

Ethics

The study procedures were carried out in accordance with the Declaration of Helsinki. The study was approved by the University of Cambridge Research Ethics Committee. All subjects were informed about the study and all provided informed consent.

Table 1. Participant demographics

	No risk *n* (%)	Some risk *n* (%)
Preferred form		
Horses/dogs	n/a	5 (19.2)
Lottery	n/a	2 (7.7)
Other	n/a	1 (3.9)
Fixed odds betting terminals	n/a	13 (50)
Slots	n/a	2 (7.7)
Sports	n/a	3 (11.5)
Ethnicity		
White British	32 (69.6)	13 (50)
White European	1 (2.2)	6 (23.1)
Irish	4 (8.7)	2 (7.7)
Black African	2 (4.3)	2 (7.7)
Black British	2 (4.3)	0
Black Caribbean	1 (2.2)	1 (3.8)
Other	4 (8.7)	2 (7.7)
Sleeping status		
Hostel	26 (56.5)	11 (42.3)
Rough sleeper	11 (23.9)	10 (38.5)
Supported housing	2 (4.3)	2 (7.7)
Other	7 (15.3)	3 (11.5)
Time homeless		
< 1 year	6 (13)	4 (15.4)
1–2 years	4 (8.7)	4 (15.4)
3–5 years	5 (10.9)	7 (26.9)
6–10 years	6 (13)	4 (15.4)
> 10 years	8 (17.4)	7.7 (2)
Unknown	17 (37)	19.2 (5)
Income		
Benefits	35 (76.1)	19 (73.1)
Employed	2 (4.3)	3 (11.5)
Begging	3 (6.5)	1 (3.8)
No income	4.3 (2)	2 (7.7)
Prostitution	4.3 (2)	0
Big issue	4.3 (2)	1 (3.8)
Smokers		
Nonsmoker	9 (19.6)	5 (19.2)
<10 cigarettes	11 (23.9)	7 (26.9)
11–20	15 (32.6)	8 (30.8)
21–30	6 (13)	1 (3.8)
31+	5 (10.9)	5 (19.2)

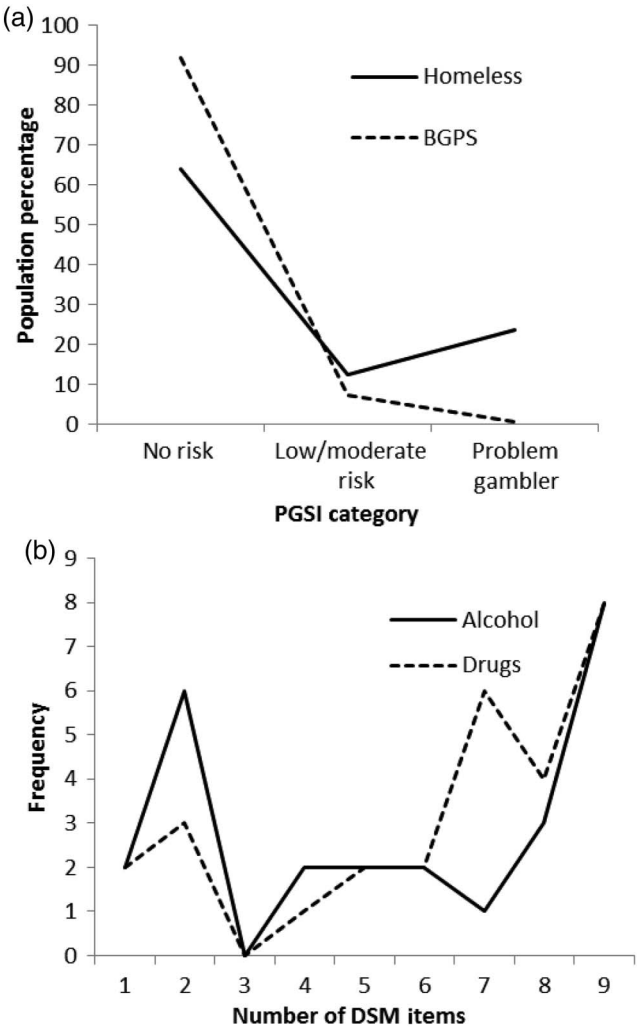

Figure 1. (a) PGSI gambler distribution. (b) Number of items endorsed on the DSM alcohol or substance use disorder criteria

RESULTS

Gambling

Participant demographics ($n = 72$) can be seen in Table 1. Past year gambling was endorsed by 32 participants (44.4%), which is less than the 73% of the general population who endorsed past year gambling in the BGPS. Participant's scores on the PGSI were classified as no risk ($n = 46$, 63.9%), low/moderate risk ($n = 9$, 12.5%), or problem gamblers ($n = 17$, 23.6%). Comparing the risk category distribution to national data from the BGPS (Wardle et al., 2011), there was a reliable difference between the two data sets (χ^2 (2) = 27.98, $p < .001$) with the largest differences in the no risk and problem gambler groups (Figure 1A). The distribution of participants across risk categories was significantly different between hostel residents and rough sleepers, with rough sleepers less likely to score in the no risk category, and more likely to be classified as a problem gambler (χ^2 (3) = 10.4, $p = .016$).

Of the 26 participants with some level of gambling risk (i.e., PGSI > 0), 16 participants (61.5%) disclosed experiencing gambling problems prior to becoming homeless, and 4 (15.4%) reported only experiencing gambling problems after becoming homeless. The remaining six individuals did not consider themselves as having experienced gambling problems. The corresponding values for the 17 problem gamblers were that 14 (82.4%) indicated gambling problems prior to homelessness, versus 3 (17.6%) that experienced gambling problems after homelessness. Nine participants admitted committing an illegal act specifically to fund gambling; 55.6% of these crimes involved theft (i.e., stealing, shoplifting, and burglary).

Negative life events

To allow analysis of the 15 negative life events scale items, participants with any gambling risk (i.e., PGSI > 0, $n = 26$)

Table 2. Negative life events

Life event (lifetime)	No risk Yes (%)	Some risk Yes (%)	χ^2	*p*-value
Serious illness	28 (60.9)	11 (42.3)	7.2	.007*
Serious accident	13 (28.3)	8 (30.8)	.2	.64
Death of family member/friend	35 (76.1)	15 (57.7)	7.3	.007*
Divorce/separation	17 (41.3)	8 (30.8)	2.2	.14
Long term unemployment	36 (78.3)	22 (84.6)	1.6	.2
Lost a job	22 (47.8)	21 (80.8)	23.8	<.001**
Alcohol problems	27 (58.7)	13 (50)	1.6	.2
Drug problems	22 (47.8)	13 (50)	.8	.78
Witness violent acts	38 (82.6)	23 (88.5)	1.1	.3
Victim of violence	28 (60.9)	11 (42.3)	7.2	.007*
Trouble with police	35 (76.1)	22 (84.6)	2.6	.11
Gambling problems	2 (4.3)	20 (76.9)	110.6	<.001**
Family member in prison	20 (43.5)	7 (26.9)	6	.01*
Victim of racism	15 (32.6)	10 (38.5)	.69	.41
Damage to property	11 (23.9)	6 (23.1)	.3	.87

*Significant at .05.
**Significant at .001.

were compared against the "no risk" participants (PGSI = 0, $n = 46$). The "some risk" group were more likely to have experienced gambling problems (χ^2 (1) = 110.6, $p < .001$) and a significant job loss (χ^2 (1) = 23.8, $p < .001$) prior to becoming homeless, but were less likely to have experienced a serious illness (χ^2 (1) = 7.2, $p = .007$), death of a close family or friend (χ^2 (1) = 7.3, $p = .007$), been a victim of violence or abuse (χ^2 (1) = 7.2, $p = .007$) or had family member sent to prison (χ^2 (1) = 6.0, $p = .01$) than the "no risk" group (Table 2).

Gambling, drug, and alcohol use

In response to the alcohol screening question, 51 participants (70.8%) disclosed that they drunk alcohol. Twenty-six participants (36.1%) endorsed at least one DSM-IV alcohol item, and in that subgroup, the modal number of items endorsed was all nine items (30.8%). In response to the subtance use screening question, 30 participants (41.7%) disclosed that they used substances other than alcohol and tobacco. Twenty eight participants (38.9%) endorsed at least one DSM-IV substance use disorder item, and in those participants the model number of items endorsed was all nine items (see Figure 1B). Of the thirty participants that disclosed any drug use in the past month, the most common primary substances were cocaine/crack (36.7%), heroin (33.3%), and cannabis (20%). PGSI scores were not significantly correlated with the number of endorsed DSM-IV alcohol disorder items ($r = .06$) or DSM-IV substance disorder items ($r = .02$).

Awareness and use of treatment services

Of participants who answered indicated some form of gambling involvement in the last 12 months, 76.9% were aware of support services for gambling. In contrast, 94.7% of participants who drunk alcohol were aware of support services for alcohol problems, and 95.7% of participants who used drugs were aware of support services for drug problems. These awareness rates were significantly lower for gambling than alcohol or substance disorders (χ^2 (2) = 23.99, $p < .001$). Regarding the actual use of treatment services, 26.9% of gamblers in the "some risk" group had sought help for gambling problems, whereas 46.2% of participants who endorsed one or more DSM-IV alcohol disorder items had sought help for alcohol problems, and 67.9% of participants who endorsed one or more DSM-IV substance disorder items had sought help for substance problems. These access rates were significantly lower for gambling than substance or alcohol disorders (χ^2 (2) = 33.8, $p < .001$).

DISCUSSION

This study sought to examine the rates of gambling involvement in a homeless sample, in order to ascertain the temporal sequencing of problematic gambling and homelessness, the associations with drug and alcohol misuse, and to establish the awareness and utilization of treatment and support services. Our observed rate of problem gambling of 23.6% is similar to previous rates in the homeless, both in a previous study in London (Sharman et al., 2015) and international data [Matheson et al., 2014 (25%); Nower et al., 2015 (12%)]. These rates are well above the rates in the general population, confirming the vulnerable status of the homeless to gambling. Of note, PGSI risk rates in the general population typically show a stepwise decrease with increasing gambling severity (BGPS, Wardle et al., 2011), but this pattern was inverted in the homeless. Of homeless individuals who endorse *any* gambling, they were most likely to be classified in the "problem gambling" category. This profile also replicates our recent observations from a larger but less detailed survey (Sharman et al., 2015).

In the U.S. National Comorbidity Survey-Replication, Kessler et al. (2008) compared age of onset data to establish the temporal sequencing of problem gambling with its comorbid disorders: problem gambling tended to have a later age of onset than major depression, general anxiety disorder, panic disorder, and other impulse control disorders, but preceded nicotine dependence and post-traumatic stress disorder. Substance abuse was similarly likely to predate or post-date problem gambling. In the problem gamblers identified by the PGSI in this study, 82.4% reported that their gambling problems preceded their homelessness. This was corroborated by the negative life events scale, on which the participants with any level of gambling risk showed significantly elevated rates of two notable types of negative life event prior to becoming homeless: gambling problems and significant job loss. Unemployment often leads to financial hardship and poverty, and is an established and powerful predictor of homelessness (Kemp et al., 2001). Poverty has also been independently associated with impaired economic decision making (Haushofer & Fehr, 2014), which could further contribute to gambling tendencies. The potential for the development of problem

gambling is congruent with circumstances created by poverty and poor financial and economic decision making. It must be noted that a smaller subset of gamblers endorsed the opposite temporal sequencing, that their homelessness precedes their gambling problems. This could be a result of a change in the subjective utility of gambling *per se*, or secondary factors such as the shelter or hot drinks that are often provided by betting shops.

Our results showed high rates of substance and alcohol disorder, drug and alcohol dependence, supporting previous work within a homeless sample in London (Fountain et al., 2003). The pattern of substance and alcohol use showed a similar profile to gambling behavior; the homeless participants tended to exhibit extremes of gambling behavior, either not gambling at all, or gambling problematically; the homeless substance and alcohol users demonstrated a similar pattern, either not using alcohol or substances at all, or using problematically. This pattern in both gambling and substance abuse behaviors could be reflective of an underlying vulnerability trait; elevated impulsivity and preference for immediate reward has previously been observed in problem gamblers (Michalczuk, Bowden-Jones, Verdejo-Garcia, & Clark, 2011), and substance and alcohol users (de Wit, 2009; Marczinski, Abroms, Van Selst, & Fillmore, 2005; Sher & Trull, 1994). However, despite showing similar engagement patterns, our results indicated that problem gambling did not correlate with drug or alcohol use. Previous studies have provided inconsistent evidence regarding the relationships between substance and alcohol disorders and gambling; Nower et al. (2015) demonstrated high levels of substance and alcohol disorders within a gambling cohort, whereas Shaffer, Freed, and Healea (2002) found level 3 gamblers had experienced less drug treatment engagement than level 1 and 2 gamblers. Inconsistent findings could be moderated by demographic differences between samples, availability of both substances and gambling opportunities, or where due to the limited funds available to the participants, the individual is forced to choose between substance use and gambling. Similar to treatment-seeking pathological gamblers in a British clinical sample (Michalczuk et al., 2011), our homeless participants identified Fixed Odds Betting Terminals as the most problematic form of gambling.

As a further objective, we sought to identify awareness and utilization of treatment and support services to the homeless population in relation to gambling, compared with drug and alcohol problems. Significantly, fewer gamblers were either aware of and/or used treatment services for problem gambling than drug users and alcohol drinkers for their respective behaviors. For some of the hostels within the Westminster area, engagement with treatment and support services provided by the hostel and outside agencies for drug and alcohol problems forms part of the accommodation agreement. This is not the case for gambling, which are also more easily hidden from staff during routine assessments due to the lack of obvious physiological symptoms. As engagement in treatment is compulsory for drugs and alcohol, and is not for gambling problems, the absolute comparison between awareness and utilization of services is potentially distorted; however, the fact that treatment for some behavior is compulsory, and is not compulsory for others serves to highlight how gambling problems are not considered to be as serious as substance abuse problems.

Some methodological limitations must be noted; the study was restricted to a small sample due to time and financial limitations. As people with differing mental health and support needs are allocated to an appropriate hostel, approximately equal numbers of participants were interviewed at each hostel to avoid a sampling bias. Results should be replicated in a larger sample before more concrete conclusions can be drawn. Each homeless individual has a different background and a different story, therefore certain aspects of data collection would be more suited to qualitative analysis; however, to facilitate rapid data collection, interviews were structured, and answers were selected from a predetermined range of options allowing us to confidently establish prevalence rates. The results are limited to one local authority within London (Westminster), an area that is known to have a high concentration of bookmaker's shops as well as one of the highest concentrations of homeless people in the country.

CONCLUSIONS

Data from the current study reinforces the assertion that problem gambling is a significant issue within the homeless population, and is more commonly a cause than a consequence of homelessness. Despite the elevated prevalence, fewer homeless gamblers are aware of, or seek treatment for, their gambling problems compared with those with substance abuse problems, highlighting the under-recognized nature of gambling problems. Homelessness is a multiply-determined outcome arising from the interplay between individual characteristics and social structures. Gambling is likely to be significant contributing factor for some people, and should be considered when assessing the treatment and support needs of the homeless.

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