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Demographic characteristics, gambling engagement, mental health, and associations with harmful gambling risk among UK Armed Forces serving personnel

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Received 15 March 2024
Accepted 22 May 2024

To cite: Jones M, Champion H, Dighton G, *et al*. *BMJ Mil Health* Epub ahead of print: [*please include* Day Month Year]. doi:10.1136/military-2024-002726

ABSTRACT

Introduction Harmful gambling negatively impacts individuals, families and communities. Growing international evidence indicates that the Armed Forces (AF) community may be at a comparatively higher risk of experiencing harm from gambling than the general population. The current study sought to identify general predictors of harmful gambling and gambling engagement among UK AF serving personnel (AFSP).

Methods We conducted a cross-sectional, exploratory survey to identify associations between demographic factors, mental health, gambling engagement and gambling type in a sample (N=608) of AFSP.

Results Most of the sample reported past-year gambling, with 23% having experienced harm. Male gender, younger age and lower educational attainment all predicted harmful gambling, as did mental health variables of prior generalised anxiety and post-traumatic stress symptomatology. Strategy-based gambling and online sports betting were also predictive of experiencing harm from gambling.

Conclusions The risk of harm from gambling is associated with demographic, mental health and gambling engagement variables among AFSP. Better understanding of these predictors is important for the development of individualised treatment approaches for harmful gambling.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Members of the Armed Forces (AF) community, including veterans and currently serving personnel, are at higher risk of experiencing harm from gambling than the general population.

WHAT THIS STUDY ADDS

⇒ A large sample of AF serving personnel (AFSP) from across all branches of service completed detailed surveys of demographics, mental health and gambling engagement.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Better targeted help and support and early identification of the potential harm caused by gambling should be prioritised among AFSP.

INTRODUCTION

Meta-analytic conceptualisations of gambling-related harms have identified multiple dimensions of adverse consequences, including financial, interpersonal, psychological, cultural and occupational domains.[1–3] Armed Forces serving personnel (AFSP) may be at comparatively higher risk of experiencing harm from gambling compared with the general population. In a recent survey[4] of n=2119 Royal Air Force (RAF) serving personnel, we found that 12.5% reported harmful gambling (indicated by risk scores ranging from 'moderate' to 'problematic' on the Problem Gambling Severity Index (PGSI)[5]). The rate is comparably higher than the estimated prevalence within the UK general population of 3.8%.[6] Demographic characteristics strongly associated with the risk of harmful gambling included being of younger age, male gender and holding a non-commissioned rank. Supportive international evidence from other jurisdictions within NATO-structured Armed Forces confirms that younger male AFSP of lower rank are most susceptible to harmful gambling, especially when experiencing mental health problems such as generalised anxiety, psychological trauma and depressed mood.[7 8]

Forms of gambling may be classified as either strategic, which involve prior knowledge or skill to influence or predict outcomes (eg, sports betting and card games, such as poker) or non-strategic, which do not allow for skill or knowledge to influence outcomes (eg, fruit/slot machines and casino games like roulette). Recently, Grubbs *et al* found that US military veterans' gambling engagement preferences for strategic or non-strategic games was significantly associated with being of younger age and male sex, but protective (ie, reduced the likelihood of adverse consequences) for post-traumatic stress disorder (PTSD) and nicotine use.[9] Previous surveys involving non-military populations have found that strategic gamblers may be at increased risk of gambling-related harm.[10] Moreover, latent class analysis carried out by Savage *et al*[11] revealed that strategic gambling was associated with younger age, male sex and traits of adventurousness and boredom susceptibility. To date, little is known about the role of these characteristics and preferences in the harmful gambling risk profile of AFSP. Taken together, given the prevalence of these demographic characteristics[12] and environmental factors

among AFSP,[13] there is a need to better understand the risks associated with an increased tendency for strategic forms of gambling within this population.

Here, we developed a survey to capture, for the first time, potential associations among mental health and demographic characteristics, including AF career variables, from all three of the branches of the UK AF. It was predicted that younger age, junior rank, male gender, mental health symptomatology and engagement with strategic gambling activities would predict increased risk of harmful gambling. Better identification of the relationships between these factors and the separate and combined risks they pose is important for the development of better targeted and more individualised treatment for harmful gambling among the AF community.

METHODS

Participants and procedure

The sample consisted of AFSP from all branches and services, excluding the Royal Fleet Auxiliary (a uniformed civilian branch of the Royal Navy; their exclusion is consistent with our focus on currently serving personnel). Participants were recruited as a self-selecting convenience sample via announcements on the Ministry of Defence DefNet intranet. A cross-sectional, self-report online survey was hosted on Qualtrics[14] and available between late March 2023 and early May 2023. At the outset, halfway through, and 1 week prior to the close of the survey, a reminder was sent to all AFSP email addresses to encourage participation. A total of 1006 respondents opened the survey; 288 either did not complete the consent form or closed the browser window at the consent stage, and a further 16 consented but left the survey after the demographics questions. Of these 702 responses, 608 were currently serving AFSP and form the focus of the current study.

Measures

Demographics

Demographic characteristics included gender, age, country of residence, ethnicity, relationship status, highest educational attainment, accommodation type and cohabitation details.

Military demographics

Personnel provided branch of service, full-time regular or a part-time reservist status, year of enlistment (to calculate career length), current rank, whether they had been deployed in the last 3 years (including locations visited) and average length of deployment.

Mental health

Common mental health problems (ie, depression and anxiety) were measured using the two-item Patient Health Questionnaire (PHQ) and the Generalised Anxiety Disorder (GAD) assessment scale. Scores of ≥3 on either scale were indicative of clinical significance.[15 16]

PTSD symptoms were assessed with the 20-item PTSD Checklist (PCL-5). Scores over 33 were deemed indicative of PTSD.[17]

Alcohol consumption was measured using the Modified-Single Alcohol Screening Questionnaire (M-SASQ). Responses of daily, weekly or monthly exceeding of eight units (male) or six units (female) on one occasion of drinking were considered indicative of higher-risk drinking behaviour.[18]

Past-year suicidality was assessed with a two-item, dichotomous (yes/no) measure of ideation and attempts from the Adult Psychiatric Morbidity Survey (APMS).[19] Loneliness was measured with a single item derived from the APMS.

Gambling engagement, harmful gambling risk severity, and experience of harms

Respondents selected past-year gambling activities, if any, from a list of 12 common (eg, 'Betting on any sporting event, including online using a smartphone app') and sample-specific gambling activities (eg, 'Tickets for a service-related sports lottery').

Harmful gambling risk was measured using the PGSI,[5] which has been widely used with international military samples,[4 7 8 20 21] and categorised into three severity categories: 'low risk' (score of 1–2), 'moderate risk' (score of 3–7) and 'problem gambling' (score of 8 or above). In addition, a cut-off score of 1 or above was used to identify any level of harmful gambling risk[22] and compare it to a category of no risk (ie, PGSI score of 0). This method is effective when the frequency of moderate and problem gambling in a sample is low.[23 24]

To measure experience of gambling related harms, the Combined Gambling Harms (CGH) measure was used.[25] The CGH measure comprises six items measuring financial harm, one item measuring interpersonal harm and one measuring work-related harm. Respondents indicated yes/no, with more affirmative responses indicating a greater number of harms experienced.

Analyses

Analyses were undertaken using IBM SPSS V.29.[26] Descriptive statistics were reported as percentages, means and standard deviations (SDs). To investigate predictors of gambling risk severity, χ^2 tests of association and binary logistic regressions were conducted and odds ratios (ORs) with 95% confidence intervals (95% CIs) were reported. Outcomes with statistically significant associations were included in a stepwise multivariate linear regression. Multicollinearity of variables entered into the regression were within tolerances of variance inflation factors (VIF; ie, VIFs remained below 2). In this model, the scale variable for age was included instead of the categorical variable; educational attainment was not included due to correlation with rank, and likely experiencing PTSD was not included due to low cell sizes.

RESULTS

Demographics

The demographic profile of respondents (N=608) is shown in Table 1. The sample was on average 39.8 (SD=9.7) years of age and mostly male (85.5%). Ethnically, most were White British (86.8%), followed by Asian or Asian British (3.5%). Most respondents were residents of England (83.7%) and educated to A-level or above (n=487, 80.1%), with 29.9% having achieved a postgraduate qualification. Most were in a relationship (83.9%), living with one or more other persons (82.1%) and slightly over half the sample lived with dependent children (54.1%). Half of the sample were living in property owned by themselves or a family member (50.7%), while a significant proportion were living in service accommodation (n=180, 46.1%).

The military demographics of the sample are reported in Table 2. Most respondents were from the Royal Navy and Royal Marines (51.5%) and currently serving as regulars (95.1%). The average length of service was 19.8 years (SD=10.6), with year of enlistment ranging from 1977 to 2022. Most of the sample were not commissioned officers (n=343, 56.4%), and over a third reported being a senior non-commissioned officer of NATO-harmonised rank OR-5 and above (eg, Petty Officer, Sergeant, Senior Technician). Just over half (n=310, 51%)

Table 1 Sociodemographic characteristics of the full sample (N=608)

Characteristic	N	%
Gender		
Male	520	85.5
Female	81	13.3
Other	*	–
Age group (years)		
20–29	105	17.3
30–39	196	32.2
40–49	199	32.7
50–59	98	16.1
60+	10	1.6
Country of residence		
England	509	83.7
Northern Ireland	11	1.8
Scotland	38	6.3
Wales	27	4.4
Outside the UK	23	3.8
Ethnicity		
White	528	86.8
Non-White	80	13.2
Relationship status		
In a relationship	510	83.9
Not in a relationship	98	16.1
Highest educational attainment†		
No formal qualifications/O-levels/GCSE	121	19.9
A-levels/Level 4 NVQ/DipHE	128	21.1
Undergraduate degree	177	29.1
Postgraduate degree/doctorate	182	29.9
Accommodation		
Renting (private/local housing authority)	20	3.3
Living in owned property (own/parents)	308	50.7
Service family accommodation	152	25.0
Single living accommodation	128	21.1
Live with		
Live alone	109	17.9
Does not live alone	499	82.1
Children in household		
0	329	54.1
1+	279	45.9

*Cell value has been suppressed due to low cell size.
†These are example qualifications at that level and may not represent the qualification held by the respondent.

had been deployed in the past 3 years, with just under a third (30.3%) reporting being deployed two times or more. Average tour length was 3–6 months (52.3%).

Mental health

Table 3 reports the mental health outcomes of the sample. Small proportions were likely to be experiencing depression (n=54, 8.9%), anxiety (n=61, 10.0%) or PTSD (n=28, 4.6%). Similarly, small proportions reported feelings of loneliness much or almost all the time (n=90, 14.8%) or an aspect of suicidality (ie, either ideation or a non-fatal suicide attempt in the last year; n=105, 17.3%). Almost half of the sample were classed as higher-risk drinkers who exceeded healthy alcohol unit amounts during one drinking occasion daily, weekly or monthly (n=279, 45.9%). Just under two-thirds of the sample had experienced at least one mental health condition (n=375, 61.7%).

Table 2 Military characteristics of the full sample (N=608)

Characteristic	n	%
Service branch		
Royal Navy (including Royal Marines)	313	51.5
Army	193	31.7
Royal Air Force	102	16.8
Service type		
Regular	578	95.1
Reservist	30	4.9
Rank		
Commissioned officer	265	43.6
Senior non-commissioned officer	225	37.0
Junior non-commissioned officer/other rank	118	19.4
Length of service (years)		
<10	114	18.8
10–19	166	27.3
20–29	173	28.5
30+	119	19.6
Deployments in the last 3 years		
0	298	49.0
1	126	20.7
2+	184	30.3
Average deployment length (months)		
<1	20	6.5
1–3	63	20.3
3–6	162	52.3
6+	65	21.0

Gambling participation, harmful gambling risk, and experience of harms

A total of 72% (n=438) personnel reported past-year gambling, with n=272 gambling within the last week (44.7%). Of the remaining respondents, 96 (15.8%) stated that they had gambled more than 12 months ago and 74 (12.2%) had never gambled. The most popular activities were the National Lottery (n=349, 57.4%), service-related lotteries (n=314, 51.6%) and online

Table 3 Mental health outcomes of the full sample (N=608)

	n	%
Depression		
Not likely (0–2)	554	91.1
Likely major depressive disorder (3+)	54	8.9
Anxiety		
Not likely (0–2)	547	90.0
Likely GAD (3+)	61	10.0
PTSD		
Not likely (0–32)	580	95.4
Likely PTSD (33+)	28	4.6
Alcohol		
Non-drinkers/lower-risk drinking (0–1)	329	54.1
Higher-risk drinker (2+)	279	45.9
Suicidality		
None/not within last year	503	82.7
Ideation/attempt within last year	105	17.3
Loneliness		
Not lonely (0–1)	518	85.2
Lonely (2+)	90	14.8

GAD, generalised anxiety disorder; PTSD, post-traumatic stress disorder.

sports betting (n=218, 35.9%). Most gamblers preferred non-strategic (n=302, 68.9%) compared with strategic gambling activities (n=55, 12.6%). The remaining group (n=81, 18.5%) showed no preference. The average number of activities was 2.9 (SD=1.6).

According to PGSI score, 64 (12.0%) were deemed at 'low risk' of harmful gambling, 22 (3.6%) were at 'moderate risk', and 37 (6.1%) were at risk of problem gambling. When these categories were collapsed, 123 personnel reported experiencing any level of harmful gambling (23.0%).

The average number of gambling harms was 2.32 (SD=2.3), with 35.8% (n=44) experiencing at least one financial harm, over a quarter reporting that the quality of their relationships had been affected (n=32, 26.0%) and 20% (n=25) reporting that their ability to work had been impacted.

Predicting harmful gambling risk

Table 4 reports the sociodemographics, military characteristics and mental health outcomes predictive of harmful gambling risk among those with experience of past-year gambling. Demographic risk factors, or positive predictors, of harmful gambling risk included being male (OR=3.13, 95% CI 1.38 to 7.12), between the ages of 20–29 years (OR=2.55, 95% CI 1.47 to 4.41) and living in service single-living accommodation (OR=1.69, 95% CI 1.04 to 2.76). Being aged 50 years or over (OR=0.50, 95% CI 0.27 to 0.94), in a relationship (OR=0.58, 95% CI 0.34 to 0.98) and living in non-service accommodation (OR=0.59, 95% CI 0.39 to 0.90) were all significant negative predictors or protective factors.

Significant military characteristics risk factors were being of a junior non-commissioned officer/other rank status (OR=4.25, 95% CI 2.50 to 7.23), serving in the AF for fewer than 10 years (OR=2.42, 95% CI 1.42 to 4.12) and being deployed twice or more in the last 3 years (OR=1.86, 95% CI 1.21 to 2.87). Protective factors were being of commissioned officer rank (OR=0.41, 95% CI 0.26 to 0.64), 30 or more years' service (OR=0.56, 95% CI 0.31 to 1.00) and not being deployed in the last 3 years (OR=0.44, 95% CI 0.28 to 0.68).

Mental health outcomes that were significant positive predictors/risk factors of harmful gambling risk included likely experiencing depression (OR=3.39, 95% CI 1.79 to 6.44), anxiety (OR=3.40, 95% CI 1.83 to 6.30), higher-risk drinking (OR=1.69, 95% CI 1.11 to 2.57), loneliness (OR=2.18, 95% CI 1.28 to 3.73) and past-year suicidality (OR=2.21, 95% CI 1.35 to 3.64).

To test the hypothesis that engagement in strategic gambling activities would increase risk of gambling harm, we analysed the relationship between the presence of strategic gambling (eg, any number of strategic gambling activities in the past year versus exclusively chance gambling) and harmful gambling. Presence of strategic gaming activities was strongly associated with harmful gambling (OR=5.11, 95% CI 3.14 to 8.31).

Demographic variables, military characteristics and mental health outcomes found to have statistically significant associations with harmful gambling risk status were included in a multivariate stepwise linear regression to identify factors predictive of increased gambling risk-severity (ie, increased PGSI score). Seven significant predictors of PGSI scores (F (7399) = 21.27, $p<0.001$) were included in the model. The multiple correlation for these predictors was $R=0.52$ and accounted for 27.2% of PGSI score variance in this sample. Being a junior non-commissioned officer/other rank was the strongest predictor, accounting for 10.4% of the variance ($\Delta R^2=0.104$, F (1405) = 47.02, $p<0.001$). Other positive predictors of continuous PGSI score in this model were likely experiencing anxiety ($\Delta R^2=0.067$), presence of strategic gaming ($\Delta R^2=0.040$), past-year suicidality ($\Delta R^2=0.011$) and being male ($\Delta R^2=0.010$). Negative predictors in continuous PGSI score in this model were being in a relationship ($\Delta R^2=0.028$) and being a commissioned officer ($\Delta R^2=0.012$).

DISCUSSION

To the best of our knowledge, the current study is the first to identify associations among the extent and type of gambling engagement, mental health variables and demographic characteristics in predicting harmful gambling risk in AFSP. Being of younger age, holding a junior rank and identifying as male gender predicted increased risk, while mental health symptomatology and engagement with strategic gambling activities were also significant risk factors. Taken together, these findings illustrate for the first time the unique combination of variables predictive of gambling harm among currently serving AF personnel.

A noteworthy finding was that a high proportion of the sample had experience of past-year gambling. However, with increased engagement comes increased risk of harm and, according to the PGSI scoring criteria, our sample was more likely to report harmful gambling compared with the general population (22% vs 3.8%, respectively).[6] These findings are consistent with the extant international literature on the prevalence of harmful gambling among serving/deployed military personnel.[4 7 8]

Our regression analyses revealed several demographic risk factors associated with experiencing gambling risk. Young, male personnel (ie, those aged between 20 and 29 years) with fewer years of military experience, of lower rank, and experiencing various common mental health disorders, in particular PTSD symptoms and anxiety, were most likely to be at risk. These findings are in line with the broader literature relating to both serving AF[4 7 8] and civilian populations.[8 27] There now exist reliable predictors of harmful gambling risk among serving military populations that may prove helpful during enlistment and/or deployment to ensure the welfare of AFSP is safeguarded.

We found that experience playing strategic forms of gambling strongly predicted harmful gambling risk among AFSP. This is the first such study to identify a relationship between game type and subsequent risk in this population (although our previous cross-sectional surveys of AFSP[4] and veterans[20] did descriptively track such gambling preferences). Here, it was notable that gambling engagement activities were comparable to general population trends, with buying service-related lottery tickets the second most preferred activity after the National Lottery and followed by online sports betting. Interestingly, while those who had engaged in past-year gambling were more likely to prefer non-strategic games, the risk of experiencing any level of harm from gambling was greater among those preferring strategic-based forms of gambling. The explanation for this finding is not clear but the relatively high levels of gambling activities indicate that not only did many participants have experience with both strategic and non-strategic games but that those at greater risk of harm may have played more games. A larger sample of participants with data collected across multiple timepoints are required to further explore potential links between PTSD and other mental health variables with escape and coping motivations for harmful gambling. It is possible, for instance, that the social aspect of some strategic forms of gambling, such as in-person or online poker, may provide respite from distressing emotional experiences.[9]

Table 4 Associations of sociodemographics, military characteristics and mental health outcome variables with the presence and absence of harmful gambling (PGSI 0 vs PGSI 1+) in respondents with past-year gambling (N=438)

	Not harmful gambling (PGSI 0; n=315)		Harmful gambling (PGSI 1+; n=123)				
Parameter	n	%	n	%	P value		OR (95% CI)
Gender							
Male	260	69.5	114	30.5	0.004*		3.13 (1.38 to 7.12)
Female	50	87.7	†	–			
Age group (years)							
20–29	34	54.0	29	46.0	<0.001*	0.002*	2.55 (1.47 to 4.41)
30–39	108	72.0	42	28.0	0.978		0.94 (0.64 to 1.54)
40–49	109	74.1	38	25.9	0.460		0.85 (0.54 to 1.32)
50+	64	82.1	14	17.9	0.028*		0.50 (0.27 to 0.94)
Country of residence							
England	271	73.4	98	26.6	0.101		0.64 (0.37 to 1.10)
Northern Ireland, Scotland, Wales, outside UK	44	63.8	25	36.2			
Ethnicity							
White British	285	70.7	118	29.3	0.058		2.48 (0.94 to 6.56)
Non-White	30	85.7	Φ	–			
Relationship status							
In a relationship	271	73.8	96	26.2	0.042*		0.58 (0.34 to 0.98)
Not in a relationship	44	62.0	27	38.0			
Highest educational attainment‡							
No formal qualifications/O-levels/GCSE	46	60.5	30	39.5	0.015*	0.008*	1.89 (1.13 to 3.16)
A-levels/Level 4 NVQ/DipHE	66	66.0	34	34.0	0.134		1.44 (0.89 to 2.33)
Undergraduate degree	99	74.4	34	25.6	0.439		0.83 (0.53 to 1.32)
Postgraduate degree/doctorate	104	80.6	25	19.4	0.009*		0.52 (0.32 to 0.85)
Accommodation							
Non-service accommodation	182	76.8	55	23.2	0.014*	0.032*	0.59 (0.39 to 0.90)
Service family accommodation	75	68.8	34	31.2	0.404		1.22 (0.76 to 1.96)
Service single living accommodation	58	63	34	37.0	0.033*		1.69 (1.04 to 2.76)
Live with							
Live alone	47	64.4	26	35.6	0.117		0.65 (0.38 to 1.11)
Does not live alone	268	73.4	97	26.6			
Children in household							
0	158	69.6	69	30.4	0.264		0.79 (0.52 to 1.20)
1+	157	74.4	54	25.6			
Service branch							
Royal Navy (including Royal Marines)	165	69.6	72	30.4	0.245	0.147	1.28 (0.84 to 1.96)
Army	93	78.8	25	21.2	0.051		0.61 (0.37 to 1.01)
Royal Air Force	57	68.7	26	31.3	0.465		1.21 (0.72 to 2.04)
Rank							
Commissioned officer	155	81.6	35	18.4	<0.001*	<0.001*	0.41 (0.26 to 0.64)
Senior non-commissioned officer	129	72.5	49	27.5	0.831		0.96 (0.62 to 1.46)
Junior non-commissioned officer/other rank	31	44.3	39	55.7	<0.001*		4.25 (2.50 to 7.23)
Length of service (years)							
<10	39	55.7	31	44.3	<0.001*	0.003*	2.42 (1.42 to 4.12)
10–19	91	70.5	38	29.5	0.661		1.11 (0.70 to 1.76)
20–29	98	76.6	30	23.4	0.165		0.71 (0.44 to 1.15)
30+	70	80.5	17	19.5	0.048*		0.56 (0.31 to 1.00)
Deployments in the last 3 years							
0	159	80.7	38	19.3	<0.001*	<0.001	0.44 (0.28 to 0.68)
1	65	67.0	32	33.0	0.223		1.35 (0.83 to 2.20)
2+	91	63.2	53	36.8	0.004*		1.86 (1.21 to 2.87)
Average deployment length (months)							
<3 months	46	73.0	17	27.0	0.109		1.66 (0.89 to 3.15)
3+	110	61.8	68	38.2			
Depression							
Not likely (0–2)	295	74.7	100	25.3	<0.001*		3.39 (1.79 to 6.44)
Likely major depressive disorder (3+)	20	46.5	23	53.5			

Continued

Table 4 Continued

Parameter	Not harmful gambling (PGSI 0; n=315) n	%	Harmful gambling (PGSI 1+; n=123) n	%	P value	OR (95% CI)
Anxiety						
Not likely (0–2)	293	74.9	98	25.1	<0.001*	3.40 (1.83 to 6.30)
Likely GAD (3+)	22	46.8	25	53.2		
PTSD						
Not likely (0–32)	307	73.1	113	26.9	0.008*	3.40 (1.31 to 8.82)
Likely PTSD (33+)	Φ	–	10	55.6		
Alcohol						
Non-drinkers/lower-risk drinking (0–1)	174	77.0	52	23.0	0.015*	1.69 (1.11 to 2.57)
Higher-risk drinker (2+)	141	66.5	71	33.5		
Loneliness						
Not lonely (0–1)	276	74.6	94	25.4	0.004*	2.18 (1.28 to 3.73)
Lonely (2+)	39	57.4	29	42.6		
Suicidality						
None/not within last year	267	75.2	88	24.8	0.002*	2.21 (1.35 to 3.64)
Ideation/attempt within last year	48	57.8	35	42.2		

In Accommodation, 'Non-service accommodation' refers to the combined categories of renting (private/local housing authority) and living in owned property (own/parents).
*p<0.05.
†Cell value has been suppressed due to low cell size.
‡These are example qualifications at that level and may not represent the qualification held by the respondent. P-value refers to significance of chi-squared test of association. OR refers to odds ratio. 95% CI refers to confidence intervals at 95%.

Our findings on mental health variables predicting harmful gambling were consistent with our previous findings from a sample recruited exclusively from the RAF.[4] That is, here we identified that depression, anxiety and risky drinking were uniquely related to experiencing gambling harm. For the first time, our findings demonstrated a role for self-reported loneliness and past-year suicidality in harmful gambling risk among AFSP. Modern occupational conditions, in particular single-person living accommodation and being away from one's friends and families while experiencing multiple deployments, may all combine to increase the risk of harmful gambling. The risk of suicide may similarly be impacted by coping with a hidden gambling problem. Taken together, these findings suggest that regular mental health screening and assessments of loneliness and suicidality may help identify those at greatest risk.

Our findings indicate that standardised psychoeducation regarding gambling risks and harms among the AF community is warranted. Educational materials about gambling risk could be produced in hard-copy leaflets for circulation among personnel and made available in the form of mandatory e-learning modules. Such population-level initiatives should consider the occupationally relevant risk factors associated within the structure and routine of life in the AF. For example, living in single living service accommodation and having an increased frequency of recent deployments were both associated with experience of harmful gambling. These findings indicate that certain occupational factors should prompt further screening and assessment for gambling harms and that prevention approaches should target these domains. Similarly, it is important to better understand the qualitative lived experience of individuals serving in the AF while experiencing harm from gambling and the potential barriers to seeking help.[28]

Limitations

Several limitations of the current study warrant consideration. The survey was only accessible to those AFSP with access to DefNET and may have excluded some on operational deployment. The sample was comparatively older than the average AFSP personnel age of 31 years, although the proportion of males here (86%) was similar.[29] The sample was also less ethnically homogeneous, with 87% White British compared with 94.4%, and were more likely to be married at 76% versus 45% in the wider AFSP population.[29 30] Also, analyses included relatively few respondents reporting higher-risk gambling which may have resulted in a lack of statistical power reflected in wide confidence intervals. Future research should seek to capture a fully representative sample of the AFSP population using contemporary survey methods (eg, push-to-web and in-person interviews) to broaden access and potentially identify longitudinal trends.

CONCLUSIONS

We revealed frequent gambling and high levels of harmful gambling risk, especially among those of younger age, lower rank, and early in their AF careers. Personnel reporting symptoms of depression and anxiety, perceived loneliness and past-year suicidality, or engagement in risky behaviours like heavy drinking, were at greater risk of gambling harm. These findings highlight the importance of screening for gambling engagement, gambling type, mental health and alcohol use in both currently serving personnel and new recruits to the AF, and the ongoing assessment of harmful gambling risk in all personnel, not least those in single-person living accommodation and with multiple operational deployments.

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Acknowledgements We thank Lt Col N H Lockwood, Dr Carl Griffin and colleagues from Defence Medical Services for their keen support of this research.

Contributors MJ, GD, JL, MF and SD designed the study. MJ and HC collected the data. MJ and GD conducted the statistical analysis. MJ, GD and SD completed the first draft of the manuscript and all authors contributed to and approved the final manuscript. SD acts as guarantor.

Funding This work was supported by a grant from Greo as part of its Safer Gambling Information Project.

Competing interests SD and JL are shareholders in Soteria Global Services, a risk management business for high-performance environments.

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by Swansea University School of Psychology Research Ethics Committee (Ref. 5770). The survey was deemed a service evaluation study by the Army Scientific Advisory Committee not requiring Ministry of Defence (MoD) Research Ethics Committee approval. Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

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