Adult Gambling Behaviors in Indiana

2022

PREVENTION INSIGHTS
AT THE INDIANA UNIVERSITY SCHOOL OF PUBLIC HEALTH
Applying Addiction Science for Healthier Communities

Indiana Council on Problem Gambling, Inc.

Report on Adult Gambling Behaviors in Indiana - 2022

Prevention Insights
Indiana University
School of Public Health – Bloomington
1033 E. Third St.
Bloomington, IN 47405-7005

Mikyoung Jun, PhD, MPH
Mary Lay, MPH
Desiree Reynolds, EdD, MPH
Junghun Lee, EdD

Survey funded by

Indiana Division of Mental Health and Addiction

Recommended citation:
Jun, M., Lay, M., Reynolds, D., & Lee, J. (2023). *Adult Gambling Behaviors in Indiana - 2022*. Bloomington, IN: Prevention Insights.

Acknowledgment:
Prevention Insights thanks the IU Center for Survey Research for its contribution to the sampling and weighting of the data.

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Introduction

Gambling was legalized in Indiana in 1989 with the establishment of the State Lottery Commission and the Hoosier Lottery. The State sells scratch-off and jackpot drawing tickets. Indiana also participates in the multi-state Powerball and Mega Millions lottery games.

The Indiana Gaming Commission was created in 1993 when the State enacted the Riverboat Gambling Act. Indiana currently has twelve commercial casinos, one tribal-based casino, and two 'racinos' combining horse-race betting and gaming facilities.

In 2019, the Indiana legislature approved sports gambling. Other forms of legal gambling in Indiana include pull-tabs, number boards, bingo, and charitable gaming.

The *2022 Adult Gambling Behaviors in Indiana* survey is funded by the Indiana Division of Mental Health and Addiction and conducted by Prevention Insights at the Indiana University School of Public Health-Bloomington in fall 2022. The purpose of the survey was to assess the scope of gambling activities, the prevalence of problem gambling behaviors, and awareness of available problem gambling resources among Indiana adults. The *2022 Adult Gambling Behaviors in Indiana* study received approval by the Indiana University Institutional Review Board (IRB), protocol #16855, as exempt. This report presents findings from the survey.

A random address-based sample of 5,400 households in Indiana was drawn by the Center for Survey Research at Indiana University to be proportional to the adult population within the ten planning regions used by the Indiana Division of Mental Health and Addiction at the time. A discussion of the sampling methodology can be found in Appendix B.

An invitation letter was mailed to the sampled households with instructions that the adult with the most recent birthday should complete the questionnaire. The invitation letter contained a description of the study, a QR code and URL with which to access the online survey in Qualtrics XM, and a $1 bill. Invitees were informed they should keep the $1 whether they completed the survey or not. A postcard reminder was sent to the sampled households two weeks after the initial invitation letter was mailed. A second reminder with a paper survey and return envelope was mailed two weeks after the first reminder postcard was mailed. An additional incentive ($5 gift card) was offered to those who completed the survey.

The questionnaire was designed by Prevention Insights with input from the Indiana Division of Mental Health and Addiction and the 2018 Survey of Adult Iowans Toward Prevalence of Gambling.[1] The questionnaire included the 9-item Pathological Gambling Diagnostic Form (DSM-V),[2] the 17-item NORC

[1] Park, K., Losch, M., Muilenburg, R., & Zubrod, A. (2019). Gambling Attitudes and Behaviors: A 2018 Survey of Adult Iowans Toward Prevalence of Gambling. Cedar Falls, IA: Center for Social and Behavioral Research, University of Northern Iowa.

[2] American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Diagnostic Screen for Gambling Problems (NODS),[3] and the 9-item Problem Gambling Severity Index (PGSI).[4] Additional questions were added to assess individuals' awareness of problem-gambling services and health-related experiences, and to collect demographic data.

Data were collected between November and December 2022. A total of 855 surveys were completed (596 online and 259 on paper) and 202 invitation letters were returned as non-deliverable, resulting in a response rate of 19.6%. One case was removed due to implausible and inconsistent responses that suggested low quality data. The final data analyses included 854 cases. Table 20 in Appendix A presents the demographic data from the survey respondents. Data were weighted to ensure proportional representation to the overall Indiana adult population. Chi-Square tests of independence were conducted to determine if statistically significant differences between demographic categories were observed. A Bonferroni correction was applied when post hoc pairwise comparisons were needed. Significant differences were noted in the respective tables. A complete description of the data processing methodology can be found in Appendix B.

SUMMARY OF FINDINGS

- Approximately 89.3% of Indiana adults reported participating in at least one gambling activity in the past year.
    - 66.1% people reported playing any lottery in the past year.
    - 55.3% of Indiana adults reported visiting casinos to gamble in the past year.
    - 37.1% people participated in online or video gaming in the past year.
    - 18.6% people participated in any sports gaming in the past year.
- There were some statistically significant differences in overall gambling participation associated with demographic characteristics:
    - Males were more likely to participate in any sports gaming than females.
    - Younger adults reported more participation in any sports gaming and online/video gambling activities than older adults.
    - Respondents with over $100,000 of annual household income reported more participation in any sports gaming and other gambling activities than others. Respondents with less than $50,000 of annual household income reported more participation in any online/video gaming activities than others.
- The prevalence of problem gambling in Indiana was less than 3% of the adult population.
    - 2.3% of the adult population had gambling disorders based on the DSM-V.
    - 1.6% of the population were pathological gamblers based on the NODS.
    - 1.3% of the population reported severe problematic gambling based on the PGSI.

[3] Gerstein, D., Volberg, R. A., Toce, M. T., Harwood, H., Johnson, R. A., Buie, T., & Sinclair, S. (1999). Gambling impact and behavior study: Report to the national gambling impact study commission. Chicago: National Opinion Research Center.

[4] Ferris, J. A., & Wynne, H. J. (2001). *The Canadian problem gambling index* (pp. 1-59). Ottawa, ON: Canadian Centre on Substance Abuse.

- There were no statistically significant differences in problem gambling associated with demographic characteristics such as gender, age, race, and household income.
- 38.8% of Indiana adults were aware of the gambling helpline 1-800-9WITHIT.
- 1.4% of Indiana adults had ever thought of having a problem with, being dependent on, or being addicted to gambling.
    - Respondents who were grouped into the gambling disorder category from DSM-V (60.9%), the pathological gambling category from NODS (87.8%), and the problematic gambling category from PGSI (85.3%) reported that they had thought of having gambling problems.

Key Findings

Prevalence of Gambling Activities

Gambling is the wagering of money or something of value on an event with an uncertain outcome. Here, we present the percentage of Indiana adults estimated to participate in various gambling activities, as well as 95% Confidence Intervals (CI). Each 95% CI provides two percentages, a low and a high value; there is a 95% probability that the range of percentages includes the true population value. For example, this study found that approximately 89.3% of Indiana adults participated in at least one gambling activity in the 12 months prior to the survey. The 95% CI was 85.7 to 92.1, meaning that we are 95% certain that the true prevalence of gambling among Indiana adults is between 85.7% and 92.1%, with our current 'best estimate' being 89.3%.

The most common gambling activities that respondents participated in were lotteries [53.5%; 95% CI: 48.6, 58.3], scratch tickets [52.8%; 95% CI: 47.9, 57.6], and raffle tickets [50.1%; 95% CI: 45.3, 54.8]. There were some statistically significant differences in overall gambling participation associated with demographic characteristics. Males were more likely to participate in any sports gaming than females. Younger adults reported more participation in any sports gaming and online/video gambling activities than older adults.

For individual gambling activities, males were more likely than females to report online sports betting, fantasy sports, slot machines, dealer-based and video-based table games, racetracks, card games, office pools, and high-risk trading. Younger individuals (18 – 34 years) were more likely to report participating in video game in app purchases and online/video gaming and less likely to report participating in lotteries and raffle tickets. The survey found that middle-aged respondents (35 – 54 years) were more likely to report multiple gambling activities, including online sports betting, video-based tables games at a casino, and lottery ticket vending machines. Whites were more likely to participate in racetracks, dice games, and office pools than others. Respondents with over $100,000 of annual household income were more likely to report participating in online sports betting, fantasy sports, dealer-based table games at a casino, racetracks, and office pools. Respondents with less than $50,000 of annual

household income were more likely to participate in video game app purchases and less likely to participating in raffle tickets.

Table 1. Population estimates and percentages of Indiana adults who reported gambling in selected categories in the past twelve months, 2022

	Population Estimate	Point Estimate (Percent)	Lower 95%	Upper 95%
Any Gambling	4,281,628	89.3	85.7	92.1
Any Lottery	3,286,556	66.1	61.2	70.6
Any Casino	2,314,620	55.3	50.0	60.5
Any Sports Gaming	901,137	18.6	15.0	22.9
Any Online/Video Gaming	1,457,744	37.1	31.7	42.9
Other Gambling Activities	3,640,281	72.8	68.3	76.9

Note. "Any lottery" includes scratch tickets or pull tabs, lottery tickets (numbers), and lottery ticket vending machines. "Any casino" includes slot machines, dealer-based table games at casino, video-based table games at casino, dice games, bingo, and racetracks (on horses or dogs). "Any sports gaming" includes online sport betting on professional, college or amateur events and fantasy sports leagues. "Any online/video gaming" includes online gambling (not sports betting), video game in app purchases, online video game play/esports, and electronic gambling machine (not casino). "Other gambling activities" include card games with friends, family, or others (not at casinos), personal skills such as pool, bowling, video games, or playing basketball, office pools (including tournament brackets), raffle tickets (including those supporting charities), high-risk trading of stocks, commodities, or futures, and betting or gambling using some other game, activity, or event.

Figure 1. Visualization of percentages of Indiana adults who gambled on any activity in the past twelve months by gender, age, and household income, 2022

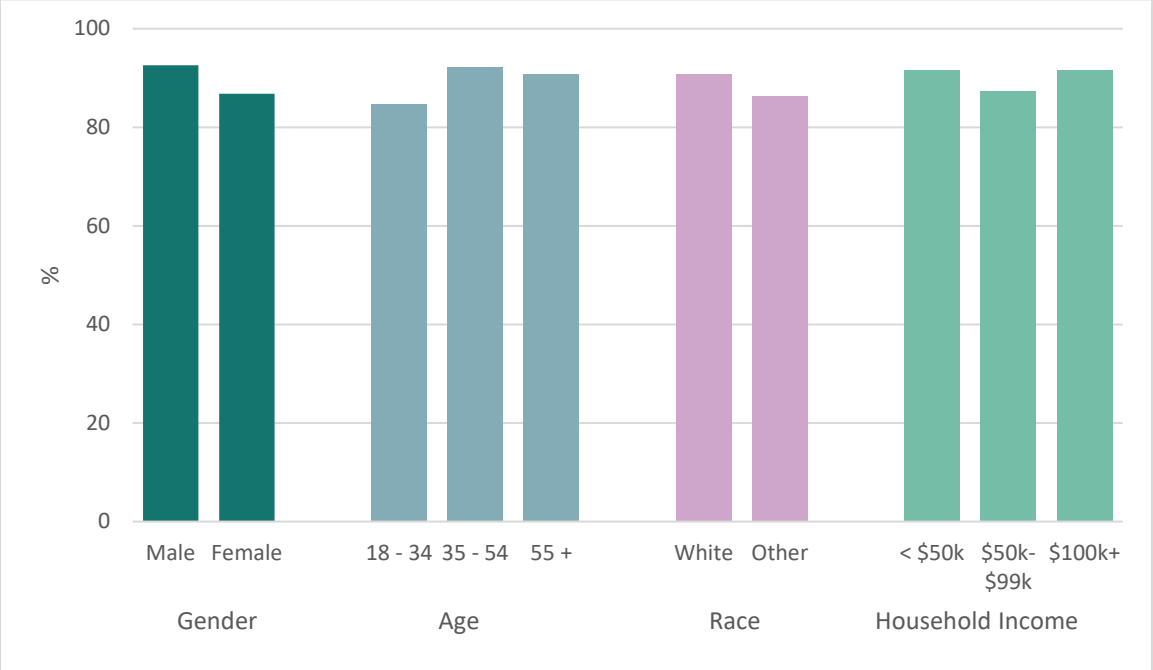

Table 2. Percentages and comparisons of Indiana adults who reported gambling in selected categories in the past twelve months by gender, age, and household income, 2022

	Gender			Age				Race			Household Income			
	Male	Female	Sig.	18 - 34	35 - 54	55 +	Sig.	White	Other	Sig.	< $50k	$50k-$99k	$100k +	Sig.
Any Gambling	92.6	86.8		84.7	92.2	90.8		90.7	86.4		91.7	87.4	91.6	
Any Lottery	67.7	64.1		55.5	70.8	69.4		67.5	60.8		65.4	61.2	72.5	
Any Casino	58.7	51.7		49.8	57.2	57.0		57.1	44.7		53.4	53.1	61.3	
Any Sports Gaming	26.4	10.5	*	18.3	27.4	9.9	*	19.7	10.7		10.8	16.8	32.2	*
Any Online/Video Gaming	40.8	34.9		49.1	40.5	20.3	*	35.3	49.0		52.3	28.1	29.0	*
Other Gambling Activities	76.6	69.4		67.7	78.2	71.9		74.5	66.0		66.2	74.2	84.0	*

Note. "Any lottery" includes scratch tickets or pull tabs, lottery tickets (numbers), and lottery ticket vending machines. "Any casino" includes slot machines, dealer-based table games at casino, video-based table games at casino, dice games, bingo, and racetracks (on horses or dogs). "Any sports gaming" includes online sport betting on professional, college or amateur events and fantasy sports leagues. "Any online/video gaming" includes online gambling (not sports betting), video game in app purchases, online video game play/esports, and electronic gambling machine (not casino). "Other gambling activities" include card games with friends, family, or others (not at casinos), personal skills such as pool, bowling, video games, or playing basketball, office pools (including tournament brackets), raffle tickets (including those supporting charities), high-risk trading of stocks, commodities, or futures, and betting or gambling using some other game, activity, or event.

Sig. = Significance probability, * $p < .05$.

Table 3. Population estimates and percentages of Indiana adults who reported gambling in selected activities in the past twelve months, 2022

	Population Estimate	Point Estimate (Percent)	Lower 95%	Upper 95%
Online sports betting	710,869	13.8	10.8	17.6
Online gambling (not sports betting)	240,310	4.7	3.1	7.0
Fantasy sports leagues	491,233	10.3	7.5	14.0
Video game in app purchases	1,034,110	20.8	16.7	25.5
Online video game (esports)	786,169	16.0	12.5	20.3
Slot machines	1,410,887	28.4	24.3	33.0
Dealer-based table games at a casino	796,260	16.0	12.5	20.2
Video-based table games at a casino	623,298	12.5	9.6	16.2
Scratch tickets	2,617,419	52.8	47.9	57.6
Lotteries	2,643,813	53.5	48.6	58.3
Lottery ticket vending machines	1,273,502	25.7	21.6	30.4
Electronic gambling machine (not at a casino)	103,948	2.7	1.4	5.0
Racetracks	306,552	7.8	5.5	11.0
Bingo	818,855	16.2	12.8	20.2
Card games (not at a casino)	2,119,839	42.6	37.8	47.4
Games of personal skill	1,491,765	29.7	25.4	34.4
Dice games	826,222	16.7	13.4	20.6
Office pools	1,003,579	19.9	16.5	23.9
Raffle tickets	2,540,017	50.1	45.3	54.8
High-risk trading	545,614	10.7	8.1	14.0
Other games	778,593	15.4	12.0	19.5

Table 4. Percentages of Indiana adults who reported gambling in selected activities in the past twelve months by gender, age, and household income, 2022

	Gender			Age				Race			Household Income			
	Male	Female	Sig.	18 - 34	35 - 54	55 +	Sig.	White	Other	Sig.	< $50k	$50k- $99k	$100k +	Sig.
Online sports betting	19.6	7.5	*	11.8	21.0	7.3	*	14.0	9.2		9.1	12.3	21.2	*
Online gambling (not sports betting)	5.1	4.4		2.8	7.8	3.6		4.7	5.2		4.7	4.3	5.4	
Fantasy sports leagues	15.2	4.5	*	11.5	13.5	4.8	*	9.9	7.7		2.8	11.9	18.8	*
Video game in app purchases	22.3	20.0		32.9	29.8	5.4	*	20.2	25.4		29.9	15.9	15.1	*
Online video game (esports)	18.0	14.6		27.4	18.5	5.7	*	14.3	25.2		20.5	14.3	12.5	
Slot machines	34.3	24.2	*	23.0	37.3	26.7		30.7	21.6		23.6	32.3	34.6	
Dealer-based table games at a casino	23.3	9.1	*	13.9	21.8	12.0		16.9	10.5		11.0	12.8	27.9	*
Video-based table games at a casino	18.1	6.8	*	6.3	20.4	9.4	*	13.2	7.4		9.8	14.1	15.4	
Scratch tickets	53.2	52.8		48.1	58.0	52.3		53.5	52.7		54.8	45.4	59.1	
Lotteries	56.9	50.1		32.0	62.0	61.3	*	55.0	47.4		48.2	53.2	62.5	
Lottery ticket vending machines	22.4	29.1		22.5	35.8	21.0	*	23.7	36.5		30.1	23.9	23.2	
Electronic gambling machine (not at a casino)	3.1	2.4		0.6	3.9	3.7		3.1	1.3		3.3	1.5	3.5	
Racetracks	11.5	4.7	*	4.8	7.3	12.4		8.9	3.4	*	3.6	4.4	17.9	*
Bingo	13.3	18.1		20.1	15.5	13.2		15.5	18.1		17.2	13.1	19.0	
Card games (not at a casino)	47.6	37.7	*	39.6	45.1	41.6		42.6	41.4		40.6	41.0	46.5	
Games of personal skill	33.7	25.6		28.2	33.5	26.9		28.7	33.4		29.9	26.1	32.4	
Dice games	15.4	18.4		12.9	22.7	14.9		18.8	8.7	*	18.0	14.6	19.0	
Office pools	24.9	14.6	*	15.1	24.0	19.2		22.3	7.7	*	11.8	16.6	35.3	*
Raffle tickets	51.9	48.8		35.4	61.3	52.1	*	52.7	40.3		37.4	55.6	66.8	*
High-risk trading	15.1	5.0	*	9.4	12.6	7.4		10.4	7.2		7.8	9.8	14.4	
Other games	17.6	14.1		16.8	16.5	13.9		14.6	21.3		17.1	12.3	17.9	

Note. Sig. = Significance probability, * $p < .05$.

Prevalence of At-Risk or Problem Gambling

Problem gambling is defined as behavior that results in harmful effects to the person who gambles, their family, friends, coworkers, or others. A gambling disorder is a behavioral addiction diagnosis characterized by a loss of control over gambling, a preoccupation with gambling, and a continuation of the behavior despite adverse consequences.[5]

In 1980, the American Psychiatric Association established a screening tool to diagnose pathological gambling.[6] The most recent version of the tool (DSM-V[7]) consists of nine items and classifies the diagnosis as a behavioral addiction disorder instead of the earlier classification as an impulse control disorder. The screen assesses difficulties in controlling gambling behavior and adverse consequences of gambling. Both the National Opinion Research Center Diagnostic Screen for Gambling Problems (NODS) and the Problem Gambling Severity Index (PGSI), which were included in the Indiana study, were derived from the American Psychiatric Association's screening instrument. The DSM-V criteria are used in clinical settings to determine if a gambling disorder is present. Both the NODS and PGSI assess problem gambling across a continuum of risk, with thresholds for low, moderate, and high levels of severity. Item content on the NODS is closely aligned with the DSM-V screen, while the PGSI includes several unique items to assess negative consequences. The PGSI includes four items that measure difficulties in controlling gambling and five items that assess adverse consequences of gambling. Research shows that PGSI is a relatively brief and straightforward tool with high internal reliability and uni-dimensionality in identifying those at risk of developing gambling problems among general population.[8,9]

Figure 2 shows the percentages of respondents who had gambling problems on the DSM-V and NODS screening tools. The two screens resulted in slight variations in the percent of Indiana adults falling within the severity categories; 2.3% [95% CI: 1.3, 4.0] of adults were classified as having gambling disorders on the DSM-V and 1.6% [95% CI: 0.7, 3.2] of adults were classified as having pathological gambling on the NODS. There were no statistically significant differences in problem gambling associated with gender, age, race, and household income.

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[5] National Research Council. (1999). *Pathological gambling: A critical review.* National Academies Press. DOI: 10.17226/6329

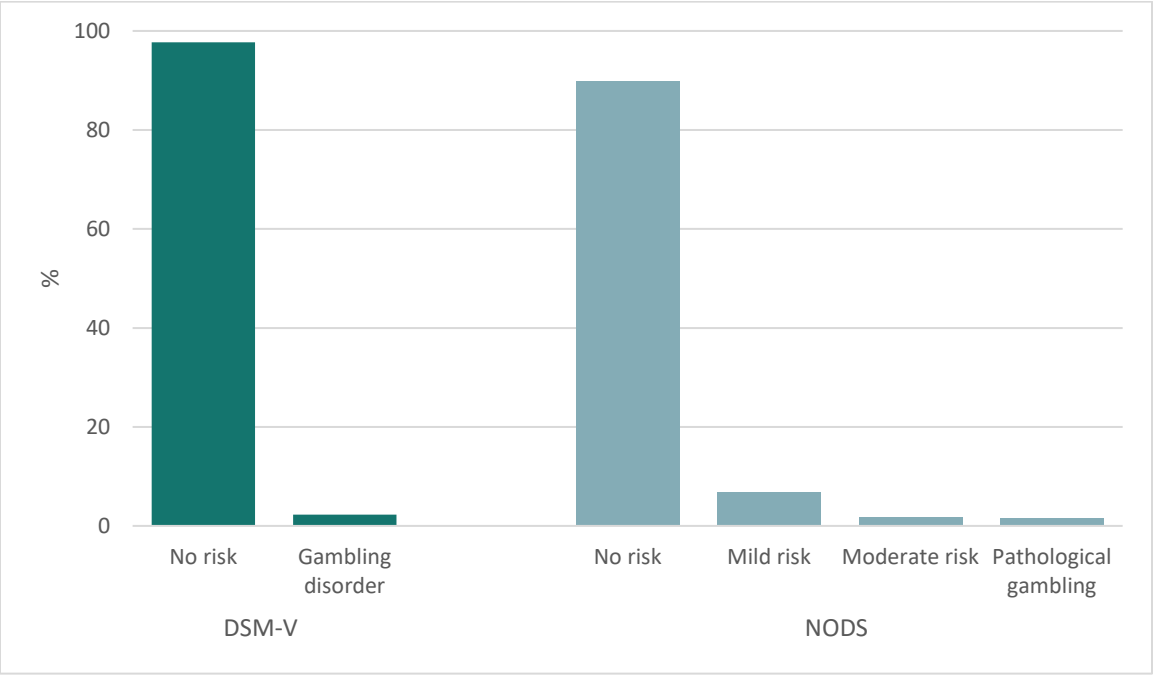
[6] American Psychiatric Association. (1980). *DSM-III: Diagnostic and statistical manual of mental disorders.* (3rd ed.). American Psychiatric Association.

[7] American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association.

[8] Orford J., Wardle H., Griffiths M., Sproston K., Erens B. (2010). PGSI and DSM-IV in the 2007 British Gambling Prevalence Survey: Reliability, item response, factor structure and inter-scale agreement. *International Gambling Studies* (10: 1): 31-44. DOI:10.1080/14459790903567132

[9] Holtgraves T. (2008). Evaluating the Problem Gambling Severity Index. *Journal of Gambling Behavior* (25:1) 105-120. DOI:10.1007/s10899-008-9107-7

Figure 2. Visualization of percentages of Indiana adults by problem gambling using DSM-V and NODS, 2022



Note. On the DSM-V, a score or 4 or higher indicates a gambling disorder. On the NODS screen, a score of 1 or 2 indicates mild risk for problem gambling, 3 or 4 indicates moderate risk, and 5 or more indicates a likely diagnosis of a gambling disorder.

Table 5. Population estimates and percentages of Indiana adults falling in problem gambling using DSM-V and NODS, 2022

	Population Estimate	Point Estimate (Percent)	Lower 95%	Upper 95%
DSM-V				
Low risk	5,040,126	97.7	96.0	98.7
Gambling disorder	119,127	2.3	1.3	4.0
NODS				
No risk	4,642,531	89.9	86.9	92.4
Mild risk	345,058	6.7	4.7	9.4
Moderate risk	91,626	1.8	0.9	3.5
Pathological gambling	80,039	1.6	0.7	3.2

Note. On the DSM-V, a score or 4 or higher indicates gambling disorder. On the NODS, a score of 1 or 2 indicates mild risk for problem gambling, 3 or 4 indicates moderate risk of problem gambling, and 5 or more indicates a likely diagnosis of a pathological gambling.

Table 6. Percentages of Indiana adults falling in problem gambling using DSM-V and NODS by gender, age, and household income, 2022

	Gender			Age				Race			Household Income			
	Male	Female	Sig.	18 - 34	35 - 54	55 +	Sig.	White	Other	Sig.	< $50k	$50k- $99k	$100k +	Sig.
DSM-V														
Low risk	96.9	98.4		98.2	95.7	99.3		97.3	99.3		98.1	96.6	97.9	
Gambling disorder	3.1	1.6		1.8	4.3	0.7		2.7	0.7		1.9	3.4	2.1	
NODS														
No risk	87.8	91.6		87.5	88.5	92.5		90.2	88.0		89.1	90.1	90.0	
Mild risk	7.9	5.9		9.1	6.0	6.1		6.0	10.5		7.1	6.9	6.6	
Moderate risk	2.3	1.4		2.0	2.6	1.1		1.9	1.4		1.9	0.9	2.9	
Pathological gambling	2.0	1.1		1.4	2.9	0.3		1.9	0.1		1.9	2.1	0.5	

Notes. On the DSM-V, a score or 4 or higher indicates gambling disorder. On the NODS, a score of 1 or 2 indicates mild risk for problem gambling, 3 or 4 indicates moderate risk of problem gambling, and 5 or more indicates a likely diagnosis of a pathological gambling.
Sig. = Significance probability, * $p < .05$.

Approximately 1.3% [95% CI: 0.6, 3.1] of the respondents were grouped into the problematic gambling category using the PGSI. There were no statistically significant differences in problem gambling severity associated with gender, age, race, and household income. There were statistically significant relationships among the screening tools. The respondents who reported gambling disorders on the DSM-V were more likely to be in the problematic gambling category on the PGSI (48.3%). Also, the respondents who reported pathological gambling on the NODS were more likely to be in the problematic gambling category on the PGSI (72.0%).

Table 7. Population estimates and percentages of Indiana adults falling in problem gambling severity categories using the Problem Gambling Severity Index (PGSI), 2022

	Population Estimate	Point Estimate (Percent)	Lower 95%	Upper 95%
PGSI				
Non-problematic	4,474,264	86.7	83.3	89.5
Low severity	532,079	10.3	7.8	13.5
Moderate severity	85,330	1.7	0.9	3.0
Problematic gambling	67,580	1.3	0.6	3.1

Note. On the PGSI screen, a score of 1 or 2 indicates a low level of problems, 3 to 7 indicates a moderate level of problems, and a score of 8 or more indicates results consistent with a likely diagnosis of a gambling disorder.

Table 8. Percentages of Indiana adults falling in problem gambling severity categories using the Problem Gambling Severity Index (PGSI) by gender, age, and household income, 2022

	Gender			Age				Race			Household Income			
	Male	Female	Sig.	18 - 34	35 - 54	55 +	Sig.	White	Other	Sig.	< $50k	$50k- $99k	$100k +	Sig.
PGSI														
Non-problematic	84.0	88.6		83.3	84.3	90.9		85.5	90.6		86.1	87.3	85.4	
Low severity	12.5	8.8		14.2	10.7	7.5		11.8	5.2		10.8	8.3	12.9	
Moderate severity	1.6	1.7		1.7	2.0	1.3		1.3	3.0		1.3	2.5	1.5	
Problematic gambling	1.9	0.9		0.8	3.0	0.3		1.4	1.2		1.8	1.9	0.2	

Notes. On the PGSI screen, a score of 1 or 2 indicates a low level of problems, 3 to 7 indicates a moderate level of problems, and a score of 8 or more indicates results consistent with a likely diagnosis of a gambling disorder.
Sig. = Significance probability, * $p < .05$.

Table 9. Percentages of Indiana adults falling in problem gambling using DSM-V and NODS by problem gambling severity categories (PGSI), 2022

	PGSI				
	Non-problematic	Low severity	Moderate severity	Problematic gambling	Sig.
DSM-V					*
Low risk	88.5	10.2	1.1	0.2	
Gambling disorder	11.9	15.1	24.7	48.3	
NODS					*
No risk	92.3	7.3	0.2	0.2	
Mild risk	47.6	45.7	6.7	0.0	
Moderate risk	24.1	41.3	34.6	0.0	
Pathological gambling	2.3	0.0	25.7	72.0	

Notes. On the DSM-V, a score or 4 or higher indicates gambling disorder. On the NODS, a score of 1 or 2 indicates mild risk for problem gambling, 3 or 4 indicates moderate risk of problem gambling, and 5 or more indicates a likely diagnosis of a pathological gambling. The Problem Gambling Severity Index (PGSI) screening tool was used to determine problem gambling severity category.
Sig. = Significance probability, * $p < .05$.

Other Health-Risk Behaviors

Table 10 shows the percentages of respondents who used selected psychoactive substances during the past month. Approximately 72.3% [95% CI: 67.5, 76.6] of the respondents reported consuming alcohol during the past month. About 32.9% [95% CI: 26.9, 39.6] of the respondents reported using cigarettes, 20.9% [95% CI: 15.6, 27.3] reported using vaping devices, and 23.6% [95% CI: 18.6, 29.5] reported using marijuana. About 14.2% [95% CI: 9.4, 20.8] of respondents reported misusing prescription or over the counter drugs. Females reported statistically higher rates of vaping within the past month than males 27.2% vs. 13.9%). Younger adults (18 – 34 years) reported statistically higher rates of vaping in the past month than older adults. Older respondents (55 year or older) were less likely to use alcohol, cigarettes, and marijuana in the past month than younger respondents. Households with over $100,000 of annual income were more likely to use alcohol than others. Respondents who were categorized into severe problem gambling were more likely to use substances during the past month. For instance, people who were grouped into the gambling disorder category from DSM-V (67.0%), the pathological gambling category from NODS (79.0%), and the problematic gambling category from PGSI (79.3%) used cigarettes during the past month.

Table 10. Population estimates and percentages of Indiana adults who used selected substances in the past month, 2022

	Population Estimate	Point Estimate (Percent)	Lower 95%	Upper 95%
Alcohol	2,847,622	72.3	67.5	76.6
Cigarettes	949,731	32.9	26.9	39.6
Vaping Devices	553,419	20.9	15.6	27.3
Marijuana	656,569	23.6	18.6	29.5
Misuse of Prescription or Over the Counter Drugs	356,759	14.2	9.4	20.8

Table 11. Percentages of Indiana adults who used selected substances in the past month by gender, age, and household income, 2022

	Gender			Age				Race			Household Income			
	Male	Female	Sig.	18 - 34	35 - 54	55 +	Sig.	White	Other	Sig.	< $50k	$50k- $99k	$100k +	Sig.
Alcohol	76.0	69.1		84.2	81.7	57.4	*	73.0	70.8		64.0	73.1	86.3	*
Cigarettes	27.0	37.8		38.3	47.7	22.2	*	35.1	20.4		40.4	22.3	31.2	
Vaping Devices	13.9	27.2	*	46.6	18.5	12.4	*	19.9	26.9		26.5	18.2	13.0	
Marijuana	23.7	23.5		44.5	29.0	12.0	*	24.2	20.2		25.1	24.9	20.6	
Misuse of Prescription or Over the Counter Drugs	12.0	16.3		26.4	18.4	8.3		14.7	11.9		20.7	7.7	9.8	

Note. Sig. = Significance probability, * $p < .05$.

Table 12. Percentages of Indiana adults who used selected substances in the past month by problem gambling, 2022

	Alcohol	Sig.	Cigarettes	Sig.	Vaping Devices	Sig.	Marijuana	Sig.	Misuse of Prescription or Over the Counter Drugs	Sig.
DSM-V				*						
Low risk	72.1		32.0		19.9		23.5		13.1	
Gambling disorder	81.8		67.0		57.4		28.3		52.4	
NODS				*						*
No risk	71.7		32.4		19.1		22.3		13.0	
Mild risk	76.4		19.8		24.3		34.1		13.8	
Moderate risk	78.3		63.3		45.4		29.4		0.0	
Pathological gambling	77.8		79.0		68.9		44.9		73.6	
PGSI				*				*		
Non-problematic	71.5		30.8		18.8		19.3		13.2	
Low severity	80.6		43.9		28.5		46.9		8.6	
Moderate severity	70.7		39.3		74.1		76.2		52.0	
Problematic gambling	62.7		79.3		47.5		17.4		57.4	

Note. Sig. = Significance probability, * $p < .05$.

Mental Health

An item from the Centers for Disease Control and Prevention's (CDC) Behavioral Risk Factor Surveillance System Survey questionnaire was used to assess mental health.[10] The question asked participants how many days in the past month their mental health was not good, including stress, depression, and problems with emotions. The mean number of mentally unhealthy days was 7.4 days [95% CI: 6.4, 8.5]. Females were more likely to report higher mean numbers of mentally unhealthy days during the past month than males (8.7 days vs. 5.8 days). Older adults (55 years or older) were less likely to report higher mean numbers of mentally unhealthy days during the past month. As annual household income increased, mean numbers of mentally unhealthy days during the past month decreased. Also, respondents who were categorized into severe problem gambling were more likely to report higher mean numbers of mentally unhealthy days during the past month. For instance, the mean number of mentally unhealthy days was 7.2 days for people who were classified into the low-risk category and 15.4 days for people who were in the gambling disorder category from the DSM-V.

Table 13. Mean number of mentally unhealthy days reported in past month (0 – 30 days), 2022

	Point Estimate (Day)	Lower 95%	Upper 95%
Mean	7.4	6.4	8.5
Standard Deviation	9.4		

[10] Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Survey Questionnaire. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2019

Table 14. Mean number of mentally unhealthy days reported in past month by gender, age, and household income (0 – 30 days), 2022

	Gender			Age				Race			Household Income			
	Male	Female	Sig.	18 - 34	35 - 54	55 +	Sig.	White	Other	Sig.	< $50k	$50k- $99k	$100k +	Sig.
Mean	5.8	8.7	*	10.9	10.0	3.0	*	7.3	8.3		9.0	7.6	4.9	*
Standard Deviation	8.0	10.3		9.0	9.4	7.2		9.6	8.4		9.3	9.6	8.1	

Note. Sig. = Significance probability, * $p < .05$.

Table 15. Mean number of mentally unhealthy days reported in past month by problem gambling (0 – 30 days), 2022

	Mean	Standard Deviation	Sig.
DSM-V			*
Low risk	7.2	9.3	
Gambling disorder	15.4	9.1	
NODS			*
No risk	7.0	9.3	
Mild risk	9.2	9.7	
Moderate risk	6.5	6.9	
Pathological gambling	21.3	6.0	
PGSI			*
Non-problematic	6.8	9.2	
Low severity	10.9	9.5	
Moderate severity	9.2	9.2	
Problematic gambling	18.0	7.9	

Note. Sig. = Significance probability, * $p < .05$.

Awareness and Use of Gambling Related Services

The respondents were asked whether they had ever seen or heard of the gambling helpline (1-800-9WITHIT). Approximately 38.8% [95% CI: 34.3, 43.4] of the respondents had ever seen or heard of the service. Table 19 shows where they had seen or heard about it. About 26.7% [95% CI: 20.8, 33.5] had seen it on TV and 16.2% [95% CI: 11.4, 22.5] had heard of it on the radio.

Among the respondents, 1.4% [95% CI: 0.6, 3.2] reported that they had thought of having a problem with, being dependent on, or being addicted to gambling, and 0.6% [95% CI: 0.2, 2.8] reported that they had ever sought treatment for a gambling problem. Whites were more likely to report that they had thought of having gambling problems than others (1.8% vs. 0.1%). Also, respondents who were categorized into severe problem gambling were more likely to report that they had thoughts that they had a gambling problem. For instance, people who were grouped into the gambling disorder category from DSM-V (60.9%), the pathological gambling category from NODS (87.8%), and the problematic gambling category from PGSI (85.3%) reported that they had thoughts that they had a gambling problem.

Table 16. Population estimates and percentages of Indiana adults who had ever seen or heard of gambling hotline or sought treatment for gambling problem, 2022

	Population Estimate	Point Estimate (Percent)	Lower 95%	Upper 95%
Ever seen or heard of gambling helpline	1,975,929	38.8	34.3	43.4
Have thought of having a problem with, being dependent on, or being addicted to gambling	72,580	1.4	0.6	3.2
Ever sought treatment for a gambling problem	32,202	0.6	0.2	2.8

Table 17. Percentages of Indiana adults who had ever seen or heard of gambling hotline or sought treatment for gambling problem by gender, age, and household income, 2022

	Gender			Age				Race			Household Income			
	Male	Female	Sig.	18 - 34	35 - 54	55 +	Sig.	White	Other	Sig.	< $50k	$50k- $99k	$100k +	Sig.
Ever seen or heard of gambling helpline	46.8	32.2	*	27.6	43.9	43.2	*	42.6	25.1	*	30.3	41.5	52.9	*
Have thought of having a problem with, being dependent on, or being addicted to gambling	2.1	0.9		1.7	2.7	0.2		1.8	0.1	*	1.8	2.2	0.2	
Ever sought treatment for a gambling problem	1.0	0.4		0.6	1.4	0.0		0.8	0.1		1.5	0.0	0.0	

Note. Sig. = Significance probability, * $p < .05$.

Table 18. Percentages of Indiana adults who had ever seen or heard of gambling hotline or sought treatment for gambling problem by problem gambling severity categories, 2022

	Ever seen or heard of gambling helpline	Sig.	Have thought of having a problem with, being dependent on, or being addicted to gambling	Sig.	Ever sought treatment for a gambling problem	Sig.
DSM-V		*		*		
Low risk	37.9		0.0		0.0	
Gambling disorder	75.1		60.9		28.8	
NODS		*		*		
No risk	36.3		0.0		0.0	
Mild risk	57.6		0.0		0.0	
Moderate risk	57.1		4.3		0.0	
Pathological gambling	80.2		87.8		41.2	
PGSI		*		*		
Non-problematic	35.9		0.0		0.0	
Low severity	56.8		0.0		0.0	
Moderate severity	42.2		17.5		9.7	
Problematic gambling	82.3		85.3		35.5	

Note. Sig. = Significance probability, * $p < .05$.

Table 19. Population estimates and percentages of Indiana adults who had ever seen or heard of gambling hotline, who saw or heard ad in select locations, 2022

	Population Estimate	Point Estimate (Percent)	Lower 95%	Upper 95%
Billboards	195,489	9.5	5.8	15.2
Radio	332,364	16.2	11.4	22.5
Casinos	199,769	9.7	6.6	14.2
Problem gambling hotline website	8,246	0.4	0.1	2.8
Lottery tickets	219,769	10.7	6.9	16.3
YouTube	57,876	2.8	0.9	8.5
Social Media (Facebook, Twitter, Instagram, etc.)	84,552	4.1	1.7	9.6
Newspaper	17,735	0.9	0.2	3.0
TV	547,892	26.7	20.8	33.5
Internet	72,887	3.6	1.9	6.4
Other	314,781	15.3	10.3	22.2

Appendix A. Demographic Characteristics of Respondents

Table 20. Unweighted demographic characteristics of respondents (*n* = 854)

	Frequency	Percent (Valid)
Gender (at birth)		
Male	307	36.8
Female	528	63.2
Age Group		
18-24	60	7.3
25-34	141	17.1
35-44	133	16.1
45-54	113	13.7
55-64	139	16.8
65-74	156	18.9
75+	83	10.1
Race		
White	744	89.7
Black or African American	37	4.5
Asian	14	1.7
Native Hawaiian/Other Pacific Islander	1	0.1
American Indian or Alaska Native	0	0.0
Other	14	1.7
More than one race	19	2.3
Hispanic/Latino/Spanish origin		
Yes	29	3.5
No	789	96.5
Employment Status		
Employed 35 or more hours a week	424	51.2
Employed fewer than 35 hours a week	64	7.7
Not employed, and looking for work	18	2.2
Not employed, but not looking for work	71	8.6
Retired	251	30.3
Educational Attainment		
Less than high school (no diploma, GED, or alternative credential)	20	2.4
High school graduate (diploma, GED, or alternative credential)	122	14.9
Some college credit, but no degree	176	21.4
Associate's degree	89	10.8
Bachelor's degree	243	29.6
Master's, doctoral, or professional degree	171	20.8
Marital Status		
Married	487	59.1
A member of an unmarried couple	50	6.1
Divorced	93	11.3
Separated	7	0.8
Widowed	50	6.1
Never been married	137	16.6

Table 20 (continued)

	Frequency	Percent (Valid)
Location of Household		
On a farm	35	4.3
In a rural setting, not on a farm	128	15.6
In a rural subdivision outside of city limits	97	11.8
In a small town of less than 5,000 people	67	8.2
In a larger town of 5,000 to less than 25,000 people	88	10.7
In a city of 25,000 to less than 50,000 people	117	14.3
In a city of 50,000 to less than 150,000 people	137	16.7
In a larger city of 150,000 or more people	150	18.3
Total Household Income in 2020		
Less than $15,000	58	7.2
$15,000 to $34,999	110	13.7
$35,000 to $49,999	121	15.1
$50,000 to $74,999	144	18.0
$75,000 to $99,999	110	13.7
$100,000 to $149,999	149	18.6
$150,000 or more	110	13.7

Note. Data in this table are not weighted.

Appendix B. Survey Methodology

Validity and Reliability

The data were collected in fall 2022. The data may have been affected by unmeasured effects from COVID-19 pandemic.

Household-based surveys do not include homeless, hospitalized, or incarcerated individuals which might have resulted in an underestimate of the extent of gambling, problem gambling, and other health-risk behaviors.

The data were measured via self-report, which may raise concerns about bias such as social desirability and recall bias.

Internal reliabilities (Cronbach' alpha) were as follows: .782 for gambling activities in the past year, .832 for DSM-V, .799 for NODS, and .954 for PGSI.

Sampling

1. Target population & sampling frame

The target population was the non-institutionalized, civilian adult household population 18+ years of age in Indiana. The sampling frame was the address-based sampling (ABS) frame that was built using the United States Postal Service (USPS) Computerized Delivery Sequence File (CDSF). The CDSF is licensed to vendors including Marketing Systems Group (MSG). MSG provided the sample for this study. The ABS frame contains over 158 million residential addresses covering nearly 100% of all households in the US and is continually updated.

Prior to sample selection, the following types of addresses were excluded from the frame to increase efficiency of the sample:

- **Seasonal** – An address receiving mail only during a specific season (i.e., summer only residence)
- **Vacant** – An address that has been unoccupied for 90 days or longer
- **Drop –** Single delivery point or receptacle that services multiple residences. Examples: boarding houses, fraternities, single door slots shared by two residences. These are more prevalent in cities such as Chicago or New York City.
- **PO Boxes that are *not* the Only Way to Get Mail (OWTGM) –** These are PO Boxes for households who *do* have another physical address where they receive mail. These are typically

excluded to avoid double counting and because we would prefer to use their physical address for contact (to have access to more detailed geography information).

The decrease in sample frame coverage due to the exclusion of these address types is minimal. We kept throwback (i.e., address is a street address, but actual delivery is made to a customer's PO Box) and Only Way to Get Mail (OWTGM) (i.e., household does not receive their mail at a physical address, so the only way to reach them is a PO Box) listings. *Since this study had previously been conducted in 2021, the sampling vendor removed addresses that were selected in the previous sample prior to sample selection.*

2. Sample size

A total sample of 5,400 addresses were selected to meet the study's analytic objectives.

3. Selection of addresses

Addresses were selected using proportionate stratified random sampling with region as the stratification variable. Region was defined according to the following 10-category classification from the Indiana Family and Social Services Administration Division of Mental Health and Addiction (last updated: August 3, 2020, see: https://www.in.gov/fssa/dmha/files/Prevention_Regional_Map.pdf).

Region 1 - La Porte, Lake, Porter
Region 2 - Cass, Elkhart, Fulton, Howard, Kosciusko, Marshall, Miami, Pulaski, St. Joseph, Starke, Wabash
Region 3 - Adams, Allen, De Kalb, Huntington, Lagrange, Noble, Steuben, Wells, Whitley
Region 4 - Benton, Boone, Carroll, Clinton, Fountain, Jasper, Montgomery, Newton, Tippecanoe, Warren, White
Region 5 - Blackford, Delaware, Grant, Hamilton, Hancock, Henry, Jay, Madison, Randolph, Tipton, Wayne
Region 6 - Clay, Hendricks, Monroe, Morgan, Owen, Parke, Putnam, Sullivan, Vermillion, Vigo
Region 7 - Marion
Region 8 - Daviess, Dubois, Gibson, Greene, Knox, Martin, Perry, Pike, Posey, Spencer, Vanderburgh, Warrick
Region 9 - Clark, Crawford, Floyd, Harrison, Jackson, Jefferson, Jennings, Lawrence, Orange, Scott, Switzerland, Washington
Region 10 - Bartholomew, Brown, Dearborn, Decatur, Fayette, Franklin, Johnson, Ohio, Ripley, Rush, Shelby, Union

This design helped ensure that the distribution of addresses by region in the *sample* mirrored the distribution of addresses in the *population*. For example, if 12% of the Indiana population lives in Region 1, 12% of the sampled addresses came from Region 1. Within each stratum or region, addresses were randomly selected.

4. Selection of respondents at a sampled address

At each sampled address, the household was instructed to have the adult 18+ years of age with the most recent birthday complete the survey. Information on the number of adults in the household was collected as part of the survey and a weighting adjustment was applied to account for differential probabilities of selection due to variability in the number of adults across households (see Data Processing section below).

DATA PROCESSING

1. Dataset preparation

Three dataset preparation activities were completed prior to weighting. First, we determined the set of respondents to retain in the final dataset. Given that nearly all respondents answered a majority of the initial battery of questions and with a desire to maximize sample size for analysis, it was determined that 854 out of 855 cases from the raw dataset would be retained for weighting. One case was removed due to implausible and inconsistent responses that suggested low quality data.

Next, we imputed missing or implausible values[11] for the weighting variables. The weighting variables were as follows:

- Number of adults in the household
- Gender
- Age
- Education
- Hispanic origin
- Race
- Household income
- Rural/urban place of residence (no imputation needed)

Missing data rates for these variables were generally low (<4%), except for the number of adults in the household (14%) and household income (6%). As an initial step, we used logical imputation to fill in missing data. This involved using other information provided in the survey to impute the missing value. For example, if a respondent reported that they were retired but did not answer the age question, we imputed their age as 65+, noting that there could be some error introduced due to early retirement.

[11] Implausible values included responses such as "0" adults in the household when the age of the respondent was reported to be 18 or older.

If we were unable to assign a value using logical imputation, data were imputed using hot deck imputation. In hot deck imputation, a respondent who has available data (called the donor) is randomly selected to provide the data for a respondent with missing data (called the recipient). Please note that imputed values were produced solely for weighting purposes and were not used in the analysis.

Once the data for the weighting variables were complete, the third set of data preparation activities involved creation of new variables with collapsed response categories for weighting purposes. We then calculated the two raw weighting adjustments (base weight and calibration) as described in the next two sections.

2. Base weight adjustment

The first part of the weight calculation was the base weight adjustment. This adjustment accounted for unequal probabilities of selection due to the number of adults in the household. For this study, one adult in each household was randomly selected to complete the survey. Therefore, adults in one-adult households had a probability of selection of 1, while adults in multi-adult households had a probability of selection defined as the following:

$$\frac{1}{number\ of\ adults\ in\ the\ household} \qquad (1)$$

To correct for this unequal probability of selection at the person level, a base weight that was the inverse of the probability of selection in (1) was applied to each respondent.

$$basewt = \frac{1}{\frac{1}{number\ of\ adults\ in\ the\ household}} = number\ of\ adults\ in\ the\ household \qquad (2)$$

3. Calibration adjustment

The next step in creating the raw weight was calibration. Surveys may over-represent specific subgroups. For example, it is common for younger persons to be less likely to participate in surveys than older persons. To correct for this bias, we adjusted the respondent counts to population estimates using calibration.

The first step in the calibration process was to identify a source for population estimates and to select potential variables for weighting. For the 2022 Indiana Gambling Survey, the US Census Bureau 2017-2021 American Community Survey 5-Year Estimates (see https://data.census.gov/cedsci/) was used for the source for the population counts. ACS data are widely used in survey weighting adjustments since they provide the most accurate, up-to-date counts of the US population.

Next, we identified variables that were available in *both* the respondent dataset and the ACS *and* that were likely to be correlated (even weakly) with survey outcome variables. We selected these variables by reviewing published literature on the demographic correlates of gambling behavior and by gathering

feedback from substantive experts. These potential weighting variables were as follows: gender, age, education, Hispanic origin, race, household income, and rural/urban place of residence. All variables were collected as part of the survey, except for rural/urban place of residence. Assignment to rural/urban categories was based on the county of the sampled address and the Purdue Extension classification of Indiana counties was used (see https://www.extension.purdue.edu/extmedia/ec/ec-766-w.pdf). There were some slight wording differences between the survey and the ACS in order to meet the survey's needs, but overall there were no major issues in matching category classifications between the two. We used the current gender identity question from the *2022 Adult Gambling Behavior in Indiana* survey, not sex assigned at birth, whenever possible. The current gender identity question had five categories, while the ACS offered only two categories (female and male), and therefore some assignment into the binary classification was required.

We then assessed whether there were differences between respondent and ACS estimates. In Table 21, respondent distributions prior to calibration are shown in the first column, and distributions from the ACS are shown in the third column. The pre-calibration respondent counts incorporate the base weight adjustment (see Section 2 above). As seen in the table, there were differences between the survey respondents (pre-calibration) and ACS on several demographic characteristics. Specifically, male, young, less educated, Hispanic, and Black adults and lower-income households were underrepresented. These differences are common in surveys.

Next, respondent distributions to population estimates were calibrated on gender, age, education, race/ethnicity, and rural/urban place of residence[12]. Prior to calibration, we conducted additional analysis and found that the size of the gender imbalance differed by age category. Therefore, we calibrated to cross-classified gender by age totals.

The calibration process iteratively adjusted the weights for respondents until they achieved alignment with the population on the weighting variables. For example, the pre-calibration weights (in this case, the base weights) were first adjusted to achieve the desired gender by age distribution. Next, the weights were adjusted so that the education distribution aligned to the population values (e.g., 44% High school graduate or less, 30% Some college/Associate, etc.). If the education adjustment altered the gender by age distribution so that it no longer matched the population, then the weights were adjusted again to align to the population values for that variable. This process, sometimes referred to as "raking", continued until the respondent distribution matched the population distribution on all of the weighting variables. Calibration (raking) was carried out using the *ipfraking* module in Stata 17. The outcome of the calibration to population distributions was a raw weight assigned to each respondent in the dataset.

[12] A calibration adjustment on household income was explored but the estimates performed better without using this adjustment. Calibrating on the individual-level demographics improved the distribution on income, although there is still some underrepresentation of lower-income households.

Table 21. Demographic characteristics of Indiana adult population: *2022 Adult Gambling Behaviors in Indiana* and ACS Estimates

	Pre-Calibration[a] %	Post-Calibration %	ACS Estimate[b] %
Gender:			
Male	38.2	47.8	49.0
Female	61.8	52.2	51.0
Age:			
18-34	24.6	28.4	29.8
35-54	31.2	33.0	32.6
55-64	17.4	17.5	17.1
65+	26.8	21.1	20.5
Education:			
High school graduate or less	18.0	42.4	44.0
Some college/Associate degree	31.8	31.1	30.3
Bachelor's degree	30.2	17.3	16.8
Master's, doctoral, or professional degree	20.0	9.2	8.9
Race/Ethnicity			
White only, non-Hispanic	87.6	81.5	80.4
Black only, non-Hispanic	3.6	8.8	8.9
Hispanic	4.4	5.4	6.0
Another race or more than one race, non-Hispanic	4.4	4.3	4.7
Rural/urban place of residence[c]			
Rural	13.0	12.7	13.1
Rural/mixed	21.1	23.8	24.0
Urban	65.9	63.5	62.9
Household income:			
Less than $35,000	20.3	28.7	27.4
$35,000-$49,999	15.2	17.7	13.0
$50,000-$74,999	18.0	16.4	18.8
$75,000-$99,999	13.7	12.1	13.8
$100,000-$149,999	18.9	15.5	15.6
$150,000 or more	13.9	9.6	11.4
UNWEIGHTED RESPONDENT COUNT:	854	854	

[a] The pre-calibration respondent counts incorporate the base weight adjustment. [b] US Census Bureau, 2017-2021 American Community Survey 5-Year Estimates. [c] Purdue University, Center for Rural Development, https://www.extension.purdue.edu/extmedia/ec/ec-766-w.pdf.

4. Weight trimming and scaling

The distribution of the raw weights was examined to identify any outliers that could substantially increase the standard error of survey estimates. A commonly used criterion for identifying outliers is a threshold of the median weight plus six times the interquartile range (IQR). For this study, this threshold

was 30,832 and it was exceeded by approximately 1.9% of the weights. These weights were trimmed to the threshold value.

The trimmed weight (*wgt_trim)* was then multiplied by the reciprocal of the mean weight to produce weights that summed to the number of respondents in the dataset (*n* = 854). The scaling factor (denominator) was 5860.22373.

$$wgt = \frac{wgt\_trim}{mean(wgt\_trim)} \qquad (3)$$

The range of weights was 0.14 to 5.26.

As seen in Table 21, when we compare the respondent distribution after applying the calibration (second column) to the population values (third column), the underrepresentation of male, young, less educated, Hispanic, and Black adults was substantially reduced. Survey estimates now generally align to the population values. There was also increased representation of lower-income households that more accurately reflects the Indiana adult population.

Dataset preparation and weighting activities were conducted using SPSS 28, SAS 9.4, Stata 17, and Excel. American Community Survey data were obtained from the US Census Bureau website, accessed in April 2023 (https://data.census.gov/cedsci/).

DATA ANALYSIS

Analysis of data was carried out using Stata 17. Weighted data were used in the analyses. The calculations of standard errors reflected weighting and stratification on the region variable. Chi-square (χ^2) tests of independence were conducted to determine statistically significant differences among groups. Bivariate analyses were used to explore the relationship between gambling behaviors, health-risk behaviors, and mental wellbeing and sociodemographic characteristics. The Bonferroni correction was applied when post hoc pairwise comparisons were needed.

For the estimation of grand population totals, an expansion weight (*wgt_t*) that summed to the Indiana adult population was used. This weight was calculated as follows:

$$wgt\_t = wgt \times \frac{5{,}129{,}253}{854} \qquad (4)$$

Appendix C. Survey Instrument

THE FOLLOWING QUESTIONS ASK ABOUT VARIOUS GAMBLING ACTIVITIES.

Please fill in the bubbles or use √ or X marks.

• *IN THE PAST 12 MONTHS, HOW OFTEN DID YOU BET OR SPEND MONEY ON…*

	Never	Between 1 – 5 times /year	Between 6 – 10 times /year	About once /month	2 -3 times /month	About once /week	2 to 6 times /week	Daily
Online sports betting on professional, college, and amateur games or events (Fan Duel, Bet MGM)	◯	◯	◯	◯	◯	◯	◯	◯
Online gambling (not sports betting)	◯	◯	◯	◯	◯	◯	◯	◯
Fantasy sports leagues or games	◯	◯	◯	◯	◯	◯	◯	◯
Video game in app purchases (loot boxes, mystery boxes, skins, etc.)	◯	◯	◯	◯	◯	◯	◯	◯
Online video game play/esports	◯	◯	◯	◯	◯	◯	◯	◯
Slot machines	◯	◯	◯	◯	◯	◯	◯	◯
Dealer based table games at a casino such as poker, keno, roulette, craps, and blackjack	◯	◯	◯	◯	◯	◯	◯	◯
Video based table games at a casino such as poker, keno, roulette, craps, and blackjack	◯	◯	◯	◯	◯	◯	◯	◯

Scratch tickets or pull tabs	◯	◯	◯	◯	◯	◯	◯	◯
Lotteries such as Powerball, Hot Lotto, Mega Millions, and daily numbers	◯	◯	◯	◯	◯	◯	◯	◯
Lottery ticket vending machines	◯	◯	◯	◯	◯	◯	◯	◯
Electronic gambling machine (not casino)	◯	◯	◯	◯	◯	◯	◯	◯
Racetracks either horses or dogs	◯	◯	◯	◯	◯	◯	◯	◯
Bingo	◯	◯	◯	◯	◯	◯	◯	◯
Card games with friends, family, or others, but not at a casino	◯	◯	◯	◯	◯	◯	◯	◯
Games of personal skill (pool, bowling, or basketball, etc.)	◯	◯	◯	◯	◯	◯	◯	◯
Dice games	◯	◯	◯	◯	◯	◯	◯	◯
Office pools such as college basketball tournaments or delivery dates for babies	◯	◯	◯	◯	◯	◯	◯	◯
Raffle tickets, including those in support of charitable causes	◯	◯	◯	◯	◯	◯	◯	◯
High-risk trading of stocks, commodities, or futures								
Other game, activity, or event not listed								

THE FOLLOWING QUESTIONS ASK ABOUT GAMBLING RELATED EXPERIENCES.
SOME OF THE QUESTIONS MAY NOT APPLY TO YOU BUT PLEASE TRY TO BE AS ACCURATE AS POSSIBLE.

	Yes	No
Have you often found yourself thinking about gambling (e.g., reliving past gambling experiences, planning the next time you will play or thinking of ways to get money to gamble)?	◯	◯
Have you needed to gamble with more and more money to get the amount of excitement you are looking for?	◯	◯
Have you become restless or irritable when trying to cut down or stop gambling?	◯	◯
Have you gambled to escape from problems or when you are feeling depressed, anxious or bad about yourself?	◯	◯
After losing money gambling, have you returned another day in order to get even?	◯	◯
Have you lied to your family or others to hide the extent of your gambling?	◯	◯
Have you made repeated unsuccessful attempts to control, cut back or stop gambling?	◯	◯
Have you risked or lost a significant relationship, job, educational or career opportunity because of gambling?	◯	◯
Have you sought help from others to provide the money to relieve a desperate financial situation caused by gambling?	◯	◯

		Yes	No
1	Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about your gambling experiences, or planning out future gambling ventures or bets? ➔ ***if "Yes," skip to Q.3***	◯	◯
2	Have there ever been periods lasting 2 weeks or longer when you spent a lot of time thinking about ways of getting money to gamble with?	◯	◯
3	Have there ever been periods when you needed to gamble with increasing amounts of money or with larger bets than before in order to get the same feeling of excitement?	◯	◯

4	Have you ever tried to stop, cut down, or control your gambling? ➔ ***if "No," skip to Q.8***	◯	◯
5	On one or more of the times when you tried to stop, cut down, or control your gambling, were you restless or irritable?	◯	◯
6	Have you ever tried but not succeeded in stopping, cutting down, or controlling your gambling? ➔ ***if "No," skip to Q.8***	◯	◯
7	Has this happened three or more times?	◯	◯
8	Have you ever gambled to relieve uncomfortable feelings such as guilt, anxiety, helplessness, or depression? ➔ ***if "Yes," skip to Q.10***	◯	◯
9	Have you ever gambled as a way to escape from personal problems?	◯	◯
10	Has there ever been a period when, if you lost money gambling one day, you would often return another day to get even?	◯	◯
11	Have you ever lied to family members, friends, or others about how much you gamble or how much money you lost on gambling? ➔ ***if "No," skip to Q.13***	◯	◯
12	Has this happened three or more times?	◯	◯
13	Have you ever written a bad check or taken money that didn't belong to you from family members or anyone else in order to pay for your gambling?	◯	◯
14	Has your gambling ever caused serious or repeated problems in your relationships with any of your family members or friends? ➔ ***if "Yes," skip to Q.17***	◯	◯
15	Has your gambling ever caused you any problems in school, such as missing classes or days of school or your grades dropping? ➔ ***if "Yes," skip to Q.17***	◯	◯
16	Has your gambling ever caused you to lose a job, have trouble with your job, or miss out on an important job or career opportunity?	◯	◯
17	Have you ever needed to ask family members or anyone else to loan you money or otherwise bail you out of a desperate money situation that was largely caused by your gambling?	◯	◯

THE FOLLOWING QUESTIONS ASK ABOUT GAMBLING RELATED CONSEQUENCES. SOME OF THE QUESTIONS MAY NOT APPLY TO YOU BUT PLEASE TRY TO BE AS ACCURATE AS POSSIBLE.

BELOW ARE A NUMBER OF STATEMENTS THAT DESCRIBE THE CONSEQUENCES OF GAMBLING. PLEASE INDICATE HOW OFTEN YOU HAVE EXPERIENCED THE FOLLOWING CONSEQUENCES IN THE PAST 12 MONTHS:

	Never	Sometimes	Most of the Time	Almost Always
Have you bet more than you could really afford to lose?	○	○	○	○
Have you needed to gamble with larger amounts of money to get the same feeling of excitement?	○	○	○	○
Have you gone back on another day to try to win back the money you lost?	○	○	○	○
Have you borrowed money or sold anything to gamble?	○	○	○	○
Have you felt that you might have a problem with gambling?	○	○	○	○
Have people criticized your betting or told you that you had a gambling problem, whether or not you thought it was true?	○	○	○	○
Have you felt guilty about the way you gamble or what happens when you gamble?	○	○	○	○
Has gambling caused you any health problems, including stress or anxiety?	○	○	○	○
Has your gambling caused any financial problems for you or your household?	○	○	○	○

THE FOLLOWING QUESTIONS ASK ABOUT GAMBLING RELATED SERVICES.

• *HAVE YOU EVER SEEN OR HEARD OF THE GAMBLING HELPLINE 1-800-9WITHIT (1-800-994-8448)?*

◯ Yes ◯ No

• *IF YES, WHERE DID YOU LAST SEE OR HEAR ABOUT 1-800-9WITHIT (1-800-994-8448)?*

◯ Billboards
◯ Casinos
◯ Lottery tickets
◯ Social Media (Facebook, Twitter, Instagram, etc.)
◯ TV
◯ Other _____
◯ Radio
◯ Problem gambling hotline website
◯ YouTube
◯ Newspaper
◯ Internet

• *DURING THE PAST 12 MONTHS, HAVE YOU THOUGHT YOU MIGHT HAVE A PROBLEM WITH, BEEN DEPENDENT ON, OR ADDICTED TO GAMBLING?*

◯ Yes ◯ No

• *HAVE YOU EVER SOUGHT TREATMENT FOR A GAMBLING PROBLEM?*

◯ Yes ◯ No

THE FOLLOWING QUESTIONS ASK ABOUT HEALTH-RELATED EXPERIENCES.

• *NOW THINKING ABOUT YOUR MENTAL HEALTH, WHICH INCLUDES STRESS, DEPRESSION, AND PROBLEMS WITH EMOTIONS, FOR HOW MANY DAYS DURING THE PAST 30 DAYS WAS YOUR MENTAL HEALTH NOT GOOD?*

_____ days

• *DURING THE PAST 30 DAYS, HOW MANY DAYS PER MONTH DID YOU HAVE AT LEAST ONE DRINK OF ANY ALCOHOLIC BEVERAGE SUCH AS BEER, WINE, A MALT BEVERAGE OR LIQUOR? (ONE DRINK IS EQUIVALENT TO A 12-OUNCE BEER, A 5-OUNCE GLASS OF WINE, OR A DRINK WITH ONE SHOT OF LIQUOR.)*

_____ days

• *DURING THE PAST 30 DAYS, ON HOW MANY DAYS DID YOU USE CIGARETTES? (DO NOT INCLUDE ELECTRONIC CIGARETTES (JUUL, E-CIGARETTES, NJOY, BLUETIP), HERBAL CIGARETTES, CIGARS, CIGARILLOS, LITTLE CIGARS, PIPES, BIDIS, KRETEKS, WATER PIPES (HOOKAHS) OR MARIJUANA.)*

_____ days

• *DURING THE PAST 30 DAYS, ON HOW MANY DAYS DID YOU USE ELECTRONIC VAPOR PRODUCTS (JUUL, E-CIGARETTES, NJOY, BLUETIP, ETC.)?*

_____ days

• *DURING THE PAST 30 DAYS, ON HOW MANY DAYS DID YOU USE MARIJUANA OR CANNABIS?*

_____ days

• *DURING THE PAST 30 DAYS, HOW MANY DAYS HAVE YOU USED ANY PRESCRIPTION DRUG OR ANY OVER THE COUNTER MEDICATION IN WAYS OTHER THAN DIRECTED?*

_____ days

THE FOLLOWING QUESTIONS ASK ABOUT PERSONAL INFORMATION.

• *INCLUDING YOURSELF, HOW MANY ADULTS AGE 18 AND OVER LIVE IN YOUR HOUSEHOLD?*

(Include adults who are living or staying in your household for more than 2 months. Do not include adults who are living somewhere else for more than 2 months, such as a college student living away or someone in the Armed Forces on deployment.)

_____ Adults (including you)

• *WHICH OF THE FOLLOWING PLACE BEST DESCRIBES WHERE YOU LIVE?*

◯ On a farm

◯ In a rural setting, not on a farm

◯ In a rural subdivision outside of city limits

◯ In a small town of less than 5,000 people

◯ In a larger town of 5,000 to less than 25,000 people

◯ In a city of 25,000 to less than 50,000 people

◯ In a city of 50,000 to less than 150,000 people

◯ In a larger city of 150,000 or more people

• *WHICH CATEGORY BELOW INCLUDES YOUR AGE?*

◯ 18 – 24

◯ 25 – 34

◯ 35 – 44

◯ 45 – 54

◯ 55 – 64

◯ 65 – 74

◯ 75+

• *WHAT IS YOUR MARITAL STATUS?*

◯ Married

◯ A member of an unmarried couple

◯ Divorced

◯ Separated

◯ Widowed

◯ Never been married

• *WHAT IS THE HIGHEST DEGREE OR LEVEL OF SCHOOL YOU COMPLETED?*

◯ Less than high school – no diploma, no GED, or alternative credential

◯ High school graduate – with diploma, GED, or alternative credential

◯ Some college credit, but no degree

◯ Associate's degree (for example: AA, AS)

◯ College graduate with a Bachelor's degree (for example: BA, BS)

◯ Master's, doctoral, or professional degree (for example: MA, MS, PhD, JD, MD)

• *ARE YOU CURRENTLY:*

◯ Employed full-time (35 or more hours a week)

◯ Employed part-time (fewer than 35 hours a week)

◯ Not employed, and looking for work

◯ Not employed, but not looking for work (taking care of family, full-time student, unable to work)

◯ Retired

• *PLEASE SELECT THE CATEGORY THAT INCLUDES THE TOTAL COMBINED INCOME, BEFORE TAXES, FOR ALL MEMBERS OF YOUR HOUSEHOLD FOR 2021.*

(Total household income includes money from jobs, net income from a business, a farm, or a rental property, government assistance, and any other money income received by members of your household who are 15 year of age or older.)

IN 2021, HOW MUCH WAS YOUR TOTAL HOUSEHOLD INCOME BEFORE TAXES? YOUR BEST ESTIMATE IS FINE.

◯ Less than $15,000

◯ $15,000 to $34,999

◯ $35,000 to $49,999

◯ $50,000 to $74,999

◯ $75,000 to $99,999

◯ $100,000 to $149,999

◯ $150,000 or more

• *WHAT SEX WERE YOU ASSIGNED AT BIRTH, ON YOUR ORIGINAL BIRTH CERTIFICATE?*

◯ Male

◯ Female

- *WHAT IS YOUR CURRENT GENDER? (MARK ONLY ONE.)*

◯ Male ◯ Female ◯ Transgender

◯ (If AIAN): Two-Spirit ◯ I use a different term: _____

- *ARE YOU HISPANIC, LATINO, OR SPANISH ORIGIN?*

◯ Yes ◯ No

- *WHAT IS YOUR RACE? (MARK ALL THAT APPLY.)*

◯ White ◯ Black or African American

◯ Asian ◯ Native Hawaiian or Other Pacific Islander

◯ American Indian or Alaska Native ◯ Other, please specify _____

REPORT ON ADULT GAMBLING BEHAVIOR

Survey Conducted November to December 2022
Report Dated June 2023

Conducted and published by:
Prevention Insights
Department of Applied Health Science
School of Public Health-Bloomington
Indiana University

Funding provided by the Family and Social Services Administration, Indiana Division of Mental Health and Addiction

Contact:
Prevention Insights
Sycamore Hall
1033 E. Third Street
Bloomington, IN 47405

www.ipgap.indiana.edu
Fax: 812-855-4940

PREVENTION INSIGHTS
AT THE INDIANA UNIVERSITY SCHOOL OF PUBLIC HEALTH

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