

6 PROBLEM GAMBLING AND NEGATIVE CONSEQUENCES FROM OWN GAMBLING

6.1 Background

Major public health issues can arise from gambling, particularly among problem gamblers and those at-risk for problem gambling (Productivity Commission 2010). Problem gamblers and at-risk gamblers can negatively impact on themselves, other individuals, families and communities and recent research is now identifying the range of harms arising from problematic gambling (Afifi, LaPlante, Taillieu, Dowd & Shaffer 2014, Langham, Thorne, Browne, Donaldson, Rose & Rockloff 2016, Productivity Commission 2010). Identifying characteristics of those people who are experiencing problems associated with their own gambling can assist policy makers and counselling services in tailoring and targeting public health messages or treatment approaches. In 2005, the prevalence of problem gambling in the NT was not different from other jurisdictions (Young et al. 2006). However, since the 2005 survey, a better understanding of problem gambling risk has led to different approaches to screening for problem gambling risk. For example, the 2005 NT survey only asked 'regular' gamblers questions on problem gambling risk, with regular gamblers defined as people who gambled weekly, excluding lotteries, instant scratch tickets (and raffle only gamblers). This approach was found to under-estimate problem, moderate and low risk gambling categories, as measured by the PGSI (Jackson, Wynne, Dowling, Tomnay & Thomas 2010). The current survey asked all gamblers questions on problem gambling risk.

6.1.1 Comparing 2005 and 2015 PGSI estimates

From the previous chapter, we know that frequency of gambling, particularly weekly gambling declined in nearly all types of gambling in the NT since 2005. We also know that only asking regular (i.e. weekly) gamblers the PGSI produces under-estimate for all PGSI risk categories. Therefore, in order to make comparison with the 2005 survey, a regular gambler variable was created within the 2015 dataset, and PGSI estimates for regular and all gamblers produced, for comparisons with 2005 data. However, the decrease in gambling frequency between the two surveys will mean that problem gambling risk estimates for 'regular' gamblers in 2015 will be lower, not necessarily because of a decline in problem gambling in the population, but due to the lower percentage of the population gambling weekly.

6.1.2 Chapter contents

This chapter presents prevalence estimates for problem gambling, moderate-risk gambling, and low-risk gambling according to the PGSI. Specifically it includes:

- prevalence for each question of the PGSI
- prevalence estimates of PGSI categories by region
- comparison of prevalence estimates for PGSI categories between the 2005 and 2015 NT surveys, by age and gender
- comparison of 2015 prevalence estimates for PGSI categories with the most recent estimates from other jurisdictions
- PGSI prevalence estimates by socio-demographic, socioeconomic and health risk factors.

6.2 Chapter highlights

- The prevalence of problem gambling in the 2015 NT adult population was 0.68% (1,206 people), and the prevalence of moderate and low risk gambling was 2.9% (5,128 people) and 8.13% (14,383 people) respectively.
- Compared with PGSI estimates amongst 'regular' gamblers in 2015, estimates for problem gambling, moderate and low risk gambling amongst all gamblers were 1.5, 3.4, 6.3 times higher, reflecting the bias in PGSI estimates when only administered to 'regular' gamblers. Amongst women, the bias was larger due to less weekly gamblers in this group. There was no significant change in the distribution of problem gambling risk amongst 'regular' gamblers between the 2005 and 2015 surveys.
- EGM, sports betting and casino table games were the activities with the highest percentage of at-risk gamblers, with problem gambling risk significantly increasing with frequency of play for these activities.
- Socio-demographic and socioeconomic characteristics significantly associated with higher prevalence of problem gambling were: Indigenous (1.1%), unemployed (4%), full-time students (2.5%), year 10 or less highest education (1.6%) and those on gross annual income less than \$30,000 (1.1%), \$100,000 to \$119,999 (1%) and \$120,000 or more (1.1%).
- Health risk factors significantly associated with higher prevalence of problem gambling were: personal alcohol problems (low [5.6%] and moderate risk [16%] higher), smoking 10 or more cigarettes per day (3.1%), living in a house with inside smoking most or all the time (4.3%) and exposure to three or more personal stressors (1.2%).
- Problem gambling risk increased with frequency of gambling with problem, moderate and low risk gambling estimates of 2.9%, 8.7% and 18% respectively amongst weekly or more gamblers, compared with 0.9%, 3.8% and 10.7% for all gamblers.
- Problem and moderate risk gamblers were more significantly likely to nominate their highest spend activity as EGMs (16% and 19%), and sports betting (10% and 22%), compared with all gamblers problem and moderate risk gambling estimates (4.7% and 10.7%).
- Of at-risk gamblers accessing an in-venue ATM three or more times while gambling, 34% were problem gamblers, compared with 15% problem gamblers amongst those accessing an ATM twice and less than 2% for those accessing only once or not at all.
- The most endorsed negative consequences because of own gambling for at-risk gamblers were raided savings (12%), felt stress/anxiety/depression (12%), borrowed money from fiends/family (9%), running out of money for bills (9%), family relationship problems (7%) and ran out of money for food (6%).

6.3 Problem gambling in the NT

Table 17 shows results for individual PGSI questions for all gamblers. All questions were scored using 0=never, 1=sometimes, 2=most of the time, and 3=almost always and scores added to give a PGSI score. Respondents whose scores add to between 1 and 2 were classified as low risk gamblers, 3 to 7 as moderate risk gamblers and those with scores 8 or higher, as problem gamblers. The most endorsed item from the PGSI was about feeling guilty (Q7) about their gambling, with 7.6% of people endorsing this for sometimes. The PGSI item was about feeling guilty (Q7) and the item on self-identification of gambling problems (Q5) had the highest endorsement for 'almost always'.

Table 17: PGSI questions used to determine problem gambling risk categories, all gamblers

Thinking about the past 12 months, how often have...	Never % (SE)	Sometimes % (SE)	Most of the time % (SE)	Almost always % (SE)
1. you bet more than you could really afford to lose?	94.4 (0.8)	4.6 (0.7)	0.5 (0.2)	0.6 (0.2)
2. you needed to gamble with larger amounts of money to get the same feeling of excitement?	95.8 (0.7)	3.9 (0.7)	0.1 (0.0)	0.2 (0.1)
3. you gone back another day to try to win back the money you lost?	95.8 (0.7)	3.7 (0.7)	0.3 (0.2)	0.2 (0.1)
4. you borrowed money or sold anything to get money to gamble?	99.2 (0.3)	0.8 (0.3)	0.0 (0.0)	0.0 (0.0)
5. you felt that you might have a problem with gambling?	96.6 (0.6)	2.2 (0.4)	0.5 (0.3)	0.8 (0.4)
6. people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?	96.9 (0.6)	2.2 (0.4)	0.6 (0.4)	0.3 (0.2)
7. you felt guilty about the way you gamble, or what happens when you gamble?	91.4 (1.1)	7.6 (1.0)	0.4 (0.2)	0.7 (0.2)
8. gambling caused you any health problems, including stress or anxiety?	97.9 (0.5)	1.9 (0.5)	0.2 (0.1)	0.1 (0.0)
9. your gambling caused any financial problems for you or your household?	98.9 (0.3)	0.9 (0.2)	0.1 (0.1)	0.1 (0.0)

Table 18 shows PGSI prevalence estimates for the 2015 NT adult population. PGSI risk estimates for the NT were: problem gamblers (0.68% [95% CI 0.37-1.27]); moderate-risk gamblers (2.90% [% CI 2.05-4.09 95]); and low-risk gamblers (8.13% [95% CI 6.55%-10.06]). Approximately 1,200 adults were classified as problem gamblers, 5,130 as moderate risk gamblers and 14,380 as low risk gamblers. There is a 95% confidence that the estimate for problem and moderate risk gambling combined falls between 2.6% and 4.8% of the NT adult population.

Table 18: PGSI prevalence rates, 2015 NT adult population

PGSI group (score)	Prevalence %	Prevalence +/- SE	Prevalence +/- 95% CI	Population N
Problem gamblers (8+)	0.68	0.46 - 0.90	0.37 - 1.27	1,206
Moderate risk gamblers (3-7)	2.90	2.39 - 3.41	2.05 - 4.09	5,128
Low risk gamblers (1-2)	8.13	7.24 - 9.02	6.55 - 10.06	14,383
No/very low risk gambler (0)	64.33	62.94 - 65.72	61.55 - 67.01	113,807
Non-gambler	23.96	22.73 - 25.19	21.64 - 26.45	42,392
Total	100.00	100.00	100.00	176,916
Moderate risk & problem gamblers (3+)	3.58	3.03 - 4.13	2.64 - 4.83	6,334

Table 19 presents a comparison of PGSI categories between 2005 and 2015 for 'regular' gamblers. There were no statistically significant changes in any of PGSI categories between the two surveys, though the estimate for moderate risk gamblers approached significance ($p=0.060$), and the estimate for moderate risk and problem gamblers grouped together was significantly lower in 2015 ($p=0.045$).

Table 19: PGSI prevalence rates among regular gamblers, 2005 and 2015 NT adult population

PGSI group (score)	2005		2015	
	% (SE)	Lower-Upper 95% CI	% (SE)	Lower-Upper 95% CI
Problem gambler (8+)	0.64 (0.12)	0.44-0.92	0.44 (0.19)	0.19-1.01
Moderate risk gambler (3-7)	1.57 (0.27)	1.12-2.18	0.84 (0.24)	0.48-1.47
Low risk gambler (1-2) *	2.01 (0.26)	1.55-2.59	1.17 (0.29)	0.72-1.89
No/very low risk gambler (0)	3.28 (0.33)	2.70-3.99	2.99 (0.38)	2.33-3.82
Non-regular gambler	65.53 (1.43)	62.67-68.29	70.6 (1.29)	68.01-73.07
Non-gambler	26.97 (1.33)	24.44-29.67	23.96 (1.23)	21.64-26.45
Moderate risk/problem gambler (3+) *	2.20 (0.29)	1.70-2.86	1.28 (0.30)	0.80-2.03

Notes: ¹ A regular gambler is someone who gambled at least weekly excluding raffles, lotteries and instant scratch tickets

* Significant difference between 2005 and 2015 estimates, $p < 0.05$

Figure 33 shows PGSI estimates from Table 19 for regular gamblers (red and blue bars), and the PGSI estimates for all gamblers from the 2015 survey (green bars). As previously stated, there were no significant difference between PGSI estimates amongst 'regular' gamblers between 2005 and 2015. However, comparing 2015 PGSI estimates for 'regular' gamblers (red bars) and all gamblers (green bars), it becomes clear that only administering the PGSI to 'regular' gamblers biases down estimates for all PGSI risk categories. PGSI estimates on all gamblers were significantly higher than 'regular' gambler estimates for moderate risk gamblers (3.4 times higher, $p < 0.001$) and low risk gamblers (6.3 times higher, $p < 0.001$), but not for problem gamblers (1.5 times higher, $p = 0.40$). In terms of population, this is an extra 427 problem gamblers, 3619 moderate risk gamblers, and 12,093 low risk gamblers not captured using the previous survey 'regular' gambler methodology.

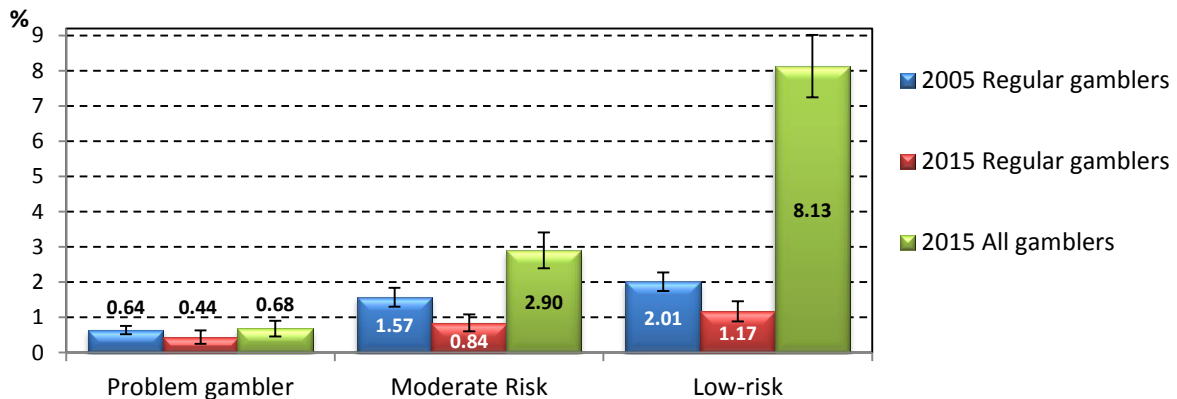


Figure 33: PGSI prevalence for regular and all gamblers, 2005 and 2015 NT adult population

6.4 Problem gambling in the NT compared with other jurisdictions

Table 20 shows comparisons between Australian jurisdictions that have carried out gambling prevalence surveys in the past 5 years that used a similar methodology to the 2015 NT Gambling Prevalence and Wellbeing Survey. That is, all gamblers and not a subset were screened for problem gambling using the PGSI. The table does not include PGSI estimates for Western Australia (WA) (which were 15 years old), though when WA last carried out a gambling prevalence survey the problem gambling prevalence was the lowest in Australia (Williams et al. 2012).

Estimates of problem gambling were quite consistent across jurisdictions ranging from 0.4% in the Australian Capital Territory to 0.8% in NSW and Victoria, compared with the NT prevalence of 0.7%. There was more variation in estimates for moderate risk gambling across jurisdictions, with the Australian Capital Territory again having the lowest rate at 1.1% and the NT and NSW having the highest at 2.9%. Similar to moderate risk gamblers, low risk gambler prevalence was lowest in the Australian Capital Territory and Tasmania (3.9%), but was highest in Victoria (8.9%), followed by NSW (8.4%) and the NT (8.1%).

Table 20: Most recent PGSI estimates by jurisdictions across Australia

	Problem gamblers (8 or more)	Moderate risk gamblers (scores 3-7)	Low risk gamblers (scores 1-2)	Moderate risk and problem gamblers (3 or more)
	%	%	%	%
Northern Territory 2015 ¹	0.7	2.9	8.1	3.6
New South Wales 2011 ¹	0.8	2.9	8.4	3.7
Victoria 2014 ²	0.8	2.8	8.9	3.6
South Australia 2012 ²	0.6	2.5	7.1	3.1
Queensland 2011-12 ²	0.5	1.9	5.2	2.4
Tasmania 2013 ¹	0.5	1.8	3.9	2.3
Australian Capital Territory 2014 ¹	0.4	1.1	3.9	1.5
Australia ³	0.5 – 1.0	1.4 – 2.1	-	1.9 – 3.1

¹ New South Wales, Northern Territory, Tasmania, and Australian Capital Territory utilised the standard four response on the PGSI (Never=0, Sometimes=1, Often=2, Always=3)

² Victoria, South Australia, and Queensland utilised a modified five response on the PGSI (Never=0, Rarely=1, Sometimes=1, Often=2, Always=3)

³ Productivity Commission, 2010a. Gambling: Productivity Commission Inquiry, Volume 1, Report No. 50. Canberra: Productivity Commission.

The next three sub-sections compare PGSI estimates between 2005 and 2015 by key demographic characteristics, and present separate PGSI estimates for all gamblers and for 'regular' gamblers. The comparison between 'regular' and 'all' gamblers provides a measure of the bias resulting from only screening 'regular' gamblers for problem gambling risk, as was done in the 2005 NT Gambling Prevalence Survey, and most surveys of that time.

6.5 Problem gambling by region, gender and age

Table 21 presents PGSI estimates for the five regions of the NT. Due to difficulties in obtaining a large enough sample across regions, most estimates of problem, moderate and low-risk gambling for regions have relative standard errors (RSEs) of greater than 25%, limiting our power to make inferences regarding differences. Therefore, no statistical comparisons between 2005 and 2015 estimates for problem gambling are made for regions.

Table 21: Region by prevalence of PGSI categories, 2015 NT adult population

	Problem gambler % (SE)	Moderate risk gambler % (SE)	Low risk gambler % (SE)	No risk gambler % (SE)	Non-gambler % (SE)	Population N
Darwin/Palmerston	0.9 (0.3)	2.6 (0.5)	8.2 (0.8)	67.5 (1.3)	20.9 (1.1)	107,512
Alice Springs	0.1 (0.1)	3.0 (1.4)	11.5 (3.3)	55.3 (3.6)	30.0 (3.3)	32,967
Regional Towns	0.3 (0.2)	1.8 (1.0)	5.5 (2.3)	69.2 (5.1)	23.3 (4.4)	17,250
Rest of NT	0.9 (0.9)	5.5 (2.8)	4.5 (2.5)	57.8 (6.5)	31.3 (6.2)	19,187
Northern Territory	0.7 (0.2)	2.9 (0.5)	8.1 (0.9)	64.3 (1.4)	24.0 (1.2)	176,916

NOTES: Caution advised in interpreting estimates in this table due to large (> 25%) relative standard errors

Figure 34 presents data from Table 21, but collapses the risk categories of the PGSI into a single 'at-risk' gambler category. The association between region and at-risk gamblers was marginally non-significant ($p=0.07$), with the prevalence of at-risk gamblers lowest in Regional Towns (7.5%), and highest in Alice Springs (14.6%).

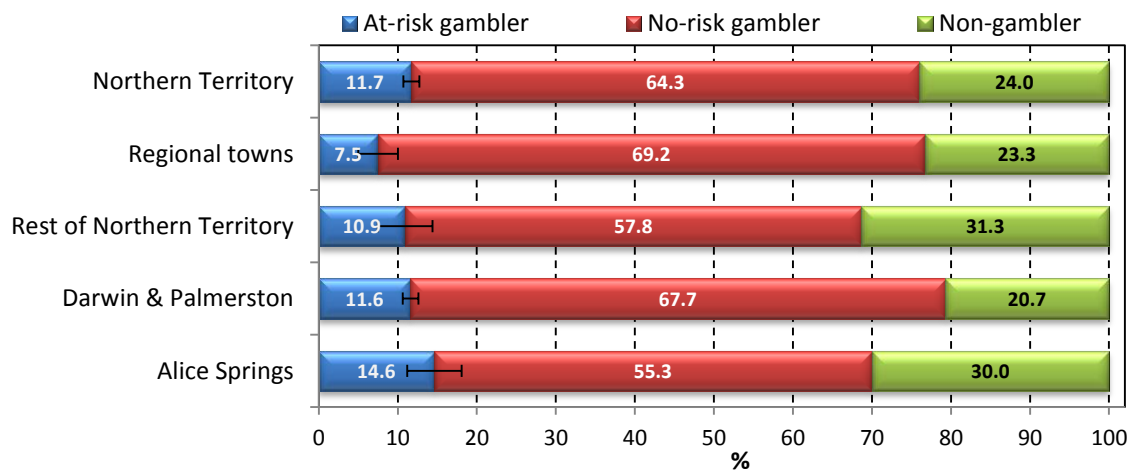


Figure 34: At-risk gambling prevalence by region, 2015 NT adult population

Figure 35 shows 2005 and 2015 estimates of PGSI categories by gender for 'regular' and all gamblers. The same pattern (and bias) is evident by gender as in the total population, though relative differences were larger amongst female gamblers. There were no significant changes in PGSI estimates between 2005 and 2015 using the 'regular' gambler criteria for either males or females, though the estimate for male moderate risk gamblers was lower in 2015 and only marginally non-significant ($p=0.071$). There were significant differences in PGSI estimates in 2015 between all and 'regular' gamblers. Specifically, PGSI estimates were significantly higher for low and moderate risk gambler estimates for both males (low risk 5.3 times higher, $p<0.001$; moderate risk 2.9 times higher, $p=0.011$) and females (low risk 8.5 times higher, $p<0.001$; moderate risk 4.2 times higher, $p=0.009$), when all gamblers were given the PGSI.

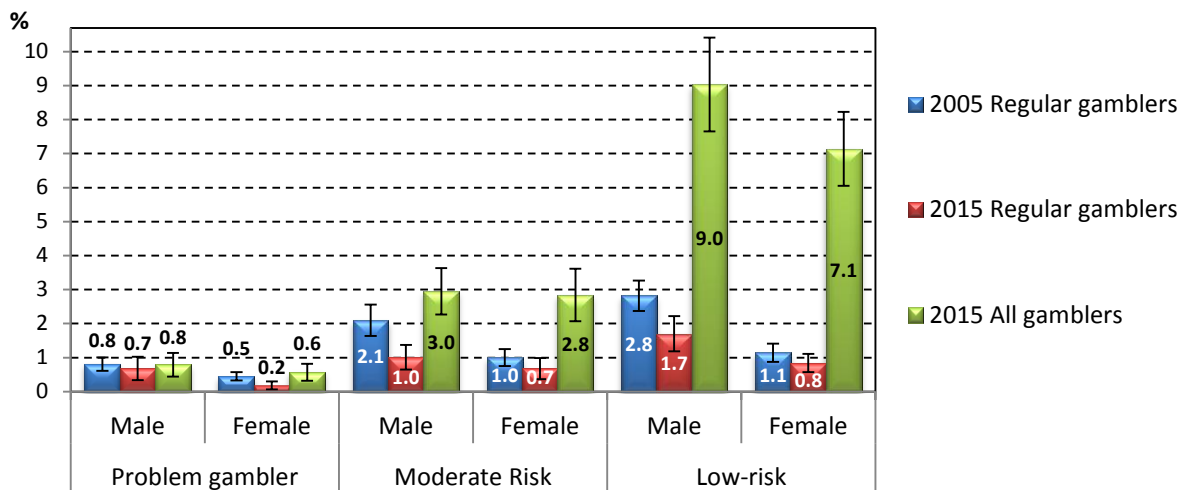


Figure 35: PGSI prevalence for regular and all gamblers by gender, 2005 and 2015 NT adult population

Figures 36 to 40 show estimates of PGSI categories for five age groups by 'regular' gambler status. As with the total population, estimates of PGSI categories were consistently higher for all gamblers compared with 'regular' gamblers across all age groups. There were no statistical differences in PGSI categories for 18-24 years ages between 2005 and 2015 for regular gamblers (blue and red bars), while the estimate for low-risk gamblers was significantly higher (4.2 times higher, $p=0.005$) for all gamblers (14.5%), compared with regular gamblers (3.4%).

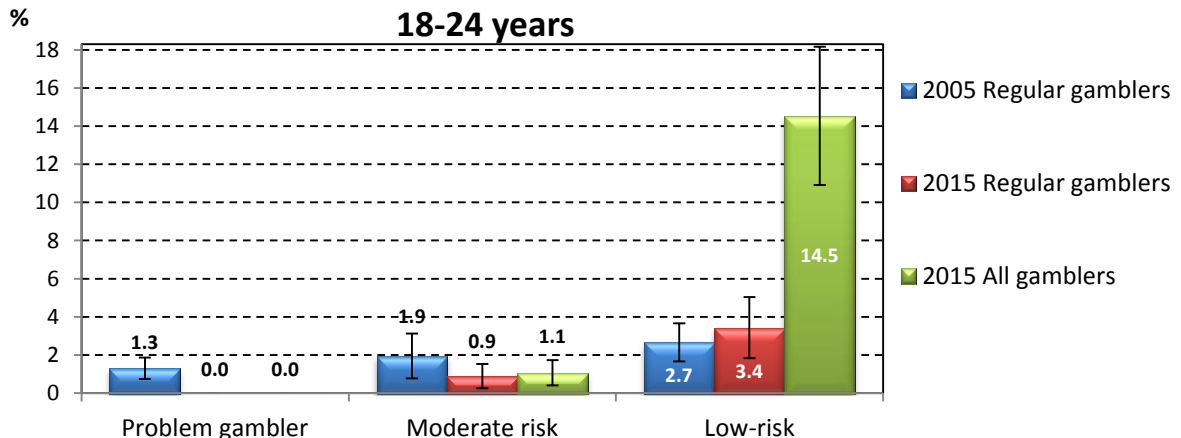


Figure 36: PGSI prevalence for 18-24 years regular and all gamblers, 2005 and 2015 NT adult population

Amongst 'regular' gamblers aged 25-34 year, there was no significant changes across any PGSI categories between 2005 and 2015 (Figure 37). Comparing 2015 PGSI estimates for all gamblers (green bars) and 'regular' gamblers (red bars), there was a marginally non-significant difference for moderate risk gamblers (3.7 times higher, $p=0.055$), and a significant difference for low-risk gamblers (7.9 times higher, $p=0.001$).

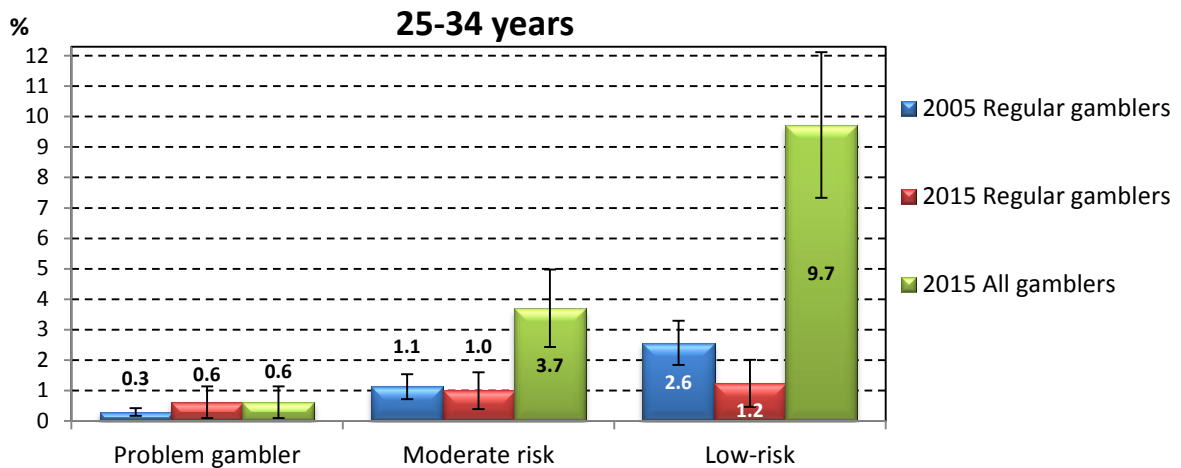


Figure 37: PGSI prevalence for 25-34 years regular and all gamblers, 2005 and 2015 NT adult population

For 'regular' gamblers, there was a significant ($p=0.027$) decrease in the prevalence of low risk gamblers between 2005 (1.5%) and 2015 (0.4%), while no other PGSI categories showed significant changes for regular gamblers from 2005 to 2015 (Figure 38). Estimates of moderate and low risk gamblers were significantly higher for all gamblers in 2015 compared with 'regular' gamblers. Specifically, moderate risk gambling was 6.2 times higher ($p=0.022$) and low risk gambling was 19.1 times higher ($p<0.001$) amongst all gamblers compared with 'regular' gamblers. There was no significant difference between problem gambler estimates for all gamblers and 'regular' gamblers.

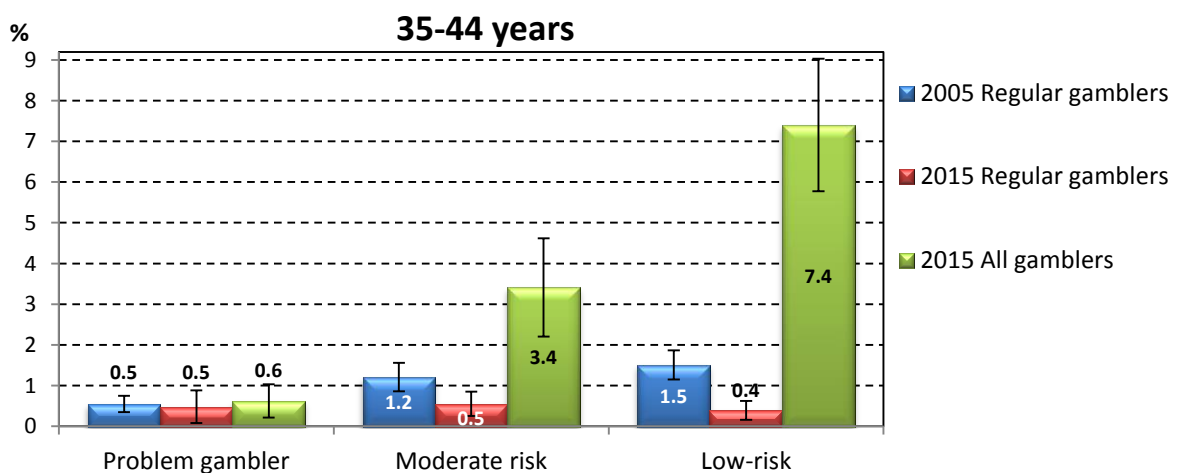


Figure 38: PGSI prevalence for 35-44 years regular and all gamblers, 2005 and 2015 NT adult population

There was a significant decrease in estimates of moderate risk gambling for regular gamblers between 2005 and 2015 (1.5% to 0.2%) amongst gamblers aged 45-54 years (Figure 39). No other changes for regular gamblers were significant from 2005 to 2015. Estimates of moderate risk gamblers were significantly higher for all gamblers compared with regular gamblers (6.4 time higher, $p=0.030$), and low risk gamblers (6.2 times higher, $p<0.001$). No significant difference was observed for

problem gambler estimates amongst all gamblers and regular gamblers in 2015 for this age group.

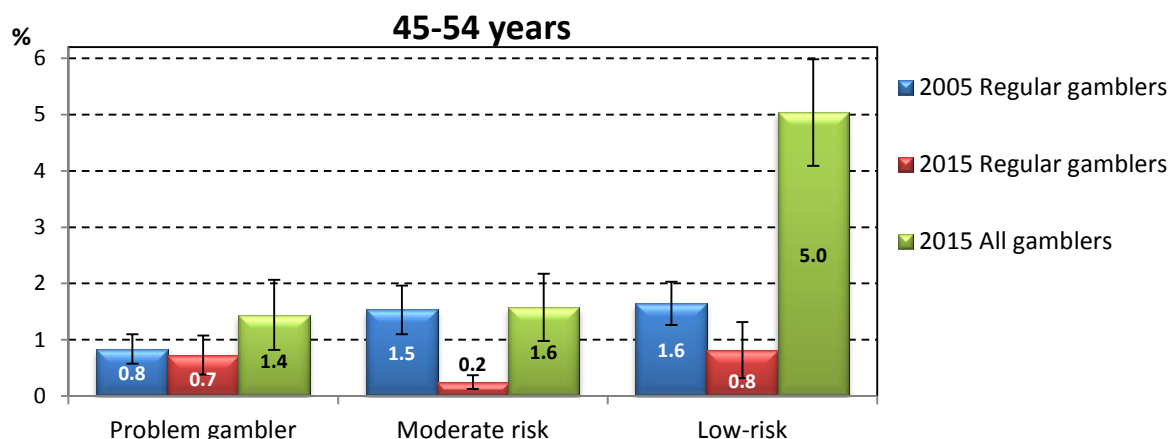


Figure 39: PGSI prevalence for 45-54 years regular and all gamblers, 2005 and 2015 NT adult population

There was a marginally non-significant ($p=0.074$) decrease in problem gambling prevalence from 2005 (0.4%) to 2015 (0.1%) amongst 'regular' gamblers aged 55 years or more (Figure 40). The estimate for low risk gamblers was significantly higher for all gamblers at 6.9% compared with 1.8% amongst 'regular' gamblers (3.9 times higher, $p<0.001$).

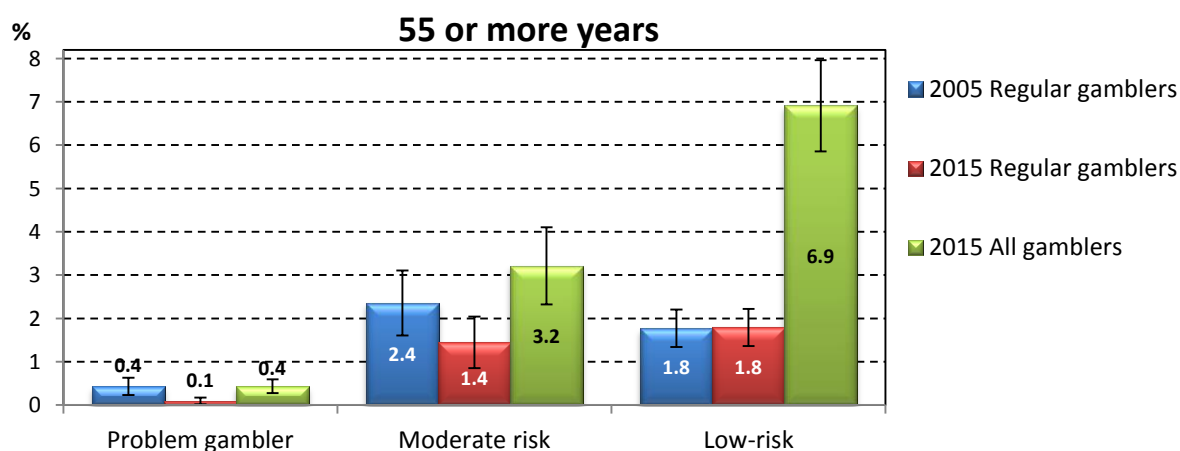


Figure 40: PGSI prevalence for 55 or more years regular and all gamblers, 2005 and 2015 NT adult population

6.6 Problem gambling by gambling activity and frequency of gambling

Table 22 shows PGSI prevalence by activity for all gamblers. There was a statistically significant association between PGSI prevalence and participation in informal games, EGMs, sports betting, casino games, keno, instant scratch tickets, bingo and number of activities played. People playing informal games had the highest problem gambling prevalence (5.8%), though the relative standard errors for all PGSI estimates were greater than 25%. In fact, none of the problem gambling prevalence estimates by activity had a relative standard error less than 25%,

indicating caution is needed in interpreting these estimates. Prevalence for all categories of the PGSI increased with the number of activities played.

Table 22: PGSI prevalence by gambling activity, all gamblers

	Problem gambler % (SE)	Moderate risk gambler % (SE)	Low risk gambler % (SE)	No or little risk gambler % (SE)	Population N
Any gambling	0.9 (0.3)	3.8 (0.7)	10.7 (1.1)	84.6 (1.3)	134,524
Informal games *	5.8 (5.7)	2.2 (1.5)	12.1 (5.2)	79.9 (7.9)	4,625
EGMs ***	2.7 (0.9)	7.8 (1.6)	18.6 (2.8)	70.9 (3.1)	40,571
Sports betting ***	2.5 (2.0)	11.2 (3.5)	18.5 (3.9)	67.8 (4.9)	13,227
Casino table games ***	2.3 (1.2)	7.9 (2.3)	24.1 (4.6)	65.8 (4.8)	23,759
Keno ***	2.0 (0.7)	6.5 (1.3)	15.5 (2.1)	75.9 (2.5)	44,902
Racetrack betting **	1.6 (0.8)	6.7 (1.5)	14.1 (2.1)	77.6 (2.5)	40,251
Lotteries	1.0 (0.4)	4.9 (1.0)	11.9 (1.3)	82.2 (1.6)	81,592
Instant scratch tickets *	0.8 (0.3)	4.0 (1.3)	16.1 (2.6)	79.1 (2.7)	30,972
Raffles	0.3 (0.1)	3.6 (0.8)	10.7 (1.7)	85.5 (1.8)	75,537
Bingo **	0.0 (0.0)	18.4 (15.9)	5.3 (5.3)	76.3 (16.1)	3,601
Non-sports betting	0.0 (0.0)	3.5 (3.5)	20.2 (10.7)	76.2 (11.1)	467
Other betting	0.0 (0.0)	19.7 (11.5)	19.1 (8.1)	61.1 (11.1)	792
Number of activities played ***					
One	0.5 (0.5)	0.3 (0.1)	4.6 (1.5)	94.6 (1.6)	35,982
Two	0.4 (0.2)	2.3 (1.3)	6.9 (1.5)	90.4 (1.9)	36,754
Three	0.7 (0.4)	3.6 (1.2)	13.5 (3.7)	82.3 (3.7)	26,263
Four	1.1 (0.8)	6.9 (2.3)	12.2 (2.4)	79.9 (3.2)	18,201
Five or more	3.1 (1.6)	11.4 (3.0)	25.6 (4.1)	59.9 (4.3)	17,325

NOTES: Caution advised in interpreting some estimates in this table due to large (> 25%) relative standard errors

Significant association between gambling activity and PGSI: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Figure 41 plots the prevalence of at-risk gamblers (i.e. problem gamblers, moderate risk and low risk gamblers grouped) by activity. After collapsing PGSI categories, only the estimates for bingo, other gambling, non-sports betting and informal games had relative standard errors greater than 25%. Compared with non-participants, there were significant differences in at-risk gambling prevalence for bingo, casino table games, sports betting, EGMs, keno, racetrack betting, instant scratch tickets, and lottery. Ignoring at-risk estimates with a greater than 25% relative standard error, the highest risk activities were casino table games, sports betting, EGMs, and keno. The lowest risk activities were raffles, lottery and instant scratch tickets.

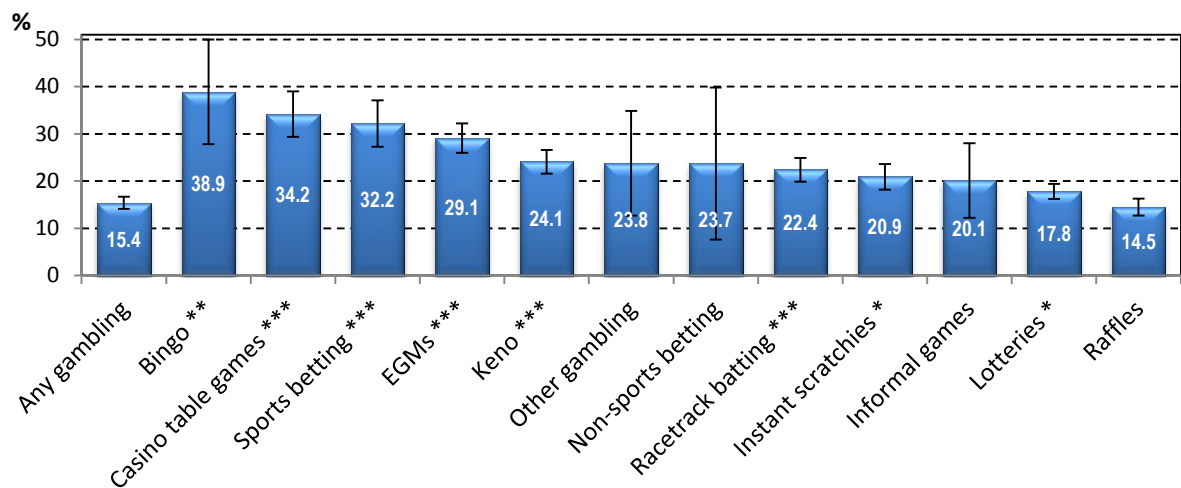


Figure 41: At-risk of problem gambling by gambling activity, NT gambling population

Significant association between activity and at-risk gambling: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Figure 42 shows that there was a significant association between number of gambling activities participated in and problem gambling risk ($p < 0.001$). Problem gambling prevalence ranges from 0.5% for people who only gamble on one activity to with 3.1% for people gambling on five or more activities. The difference in problem gambling risk between participation in four activities compared with five or more, was large with problem gambling prevalence going from 1.1% to 3.1%, moderate risk gambling from 6.9% to 11.4% and low risk from 12.2% to 25.6%.

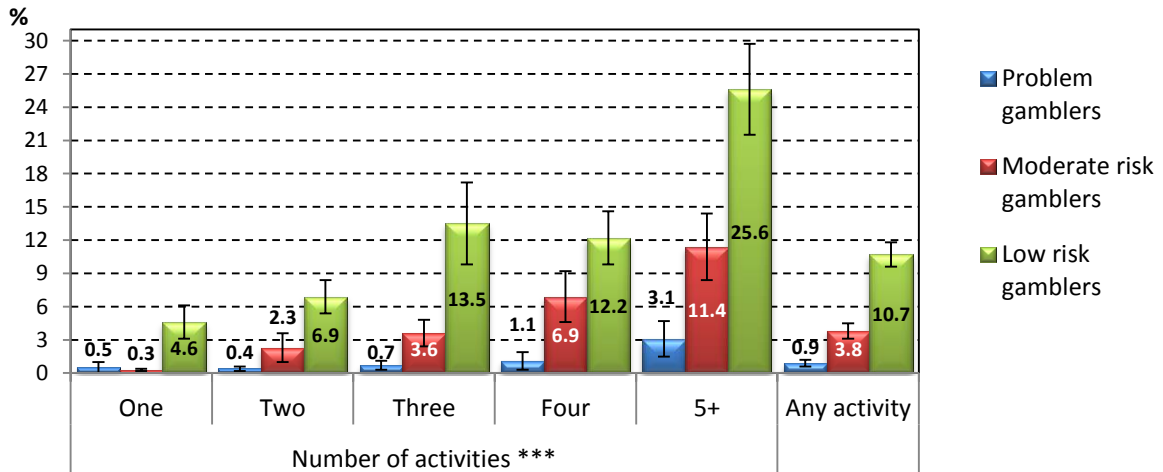


Figure 42: PGSI prevalence by number of gambling activities played, all gamblers

Significant association between number of activity and PGSI: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Figure 43 shows that there was a highly significant ($p < 0.001$) association between gambling frequency and problem gambling risk. Compared with a problem gambling prevalence of 0.9% across all gamblers, nearly 3% of people who gambled weekly were classified as problem gamblers, with this decreasing to 0.9% for monthly gamblers and 0% for less than monthly gamblers. Moderate risk gamblers were over-represented amongst weekly gamblers (8.7%) compared with all gamblers (3.8%). The same pattern was present for low risk gamblers, with 18.2% of weekly gamblers classified as low risk, decreasing to 12.2% for monthly gamblers.

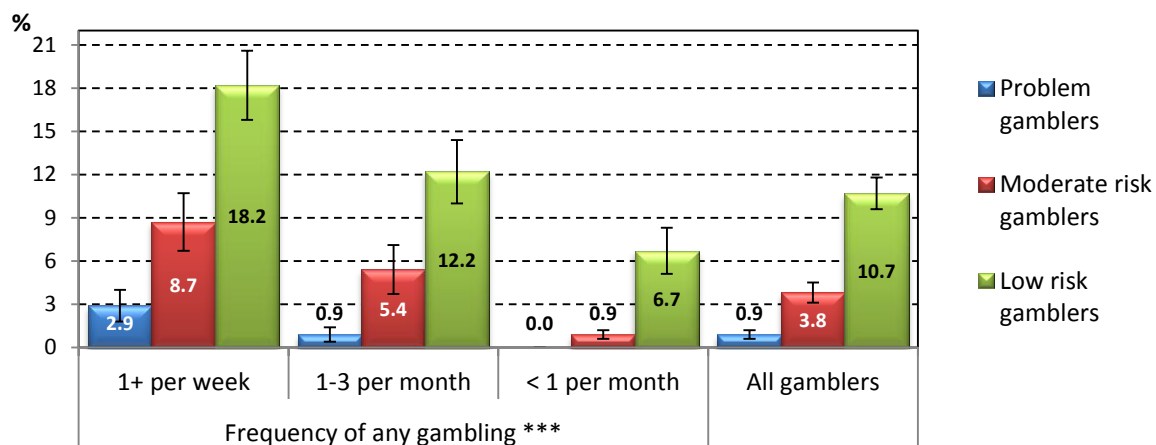


Figure 43: PGSI prevalence by frequency of any gambling, all gamblers

Significant association between frequency of gambling and PGSI: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

6.7 Problem gambling by highest spend activity

Table 23 shows problem gambling risk by highest spend activity, but with problem and moderate risk gamblers collapsed to reduce the standard error of the estimate. Lotteries (1.7%) and raffles/sweeps (0.8%) highest spend gamblers were significantly under-represented amongst problem and moderate risk gamblers, compared with all gamblers (4.7%). EGMs, and sports betting highest spend gamblers were significantly over-represented amongst problem, moderate and low risk gamblers, as were highest spend bingo gamblers though caution should be made interpreting the estimate for bingo as the relative standard error is greater than 50% of the estimate.

Table 23: Problem gambling risk by highest spend activity, all gamblers

	Problem or moderate risk gamblers % (SE)	Low risk gamblers % (SE)	Non-risk gamblers % (SE)	Population N
All gamblers	4.7 (0.7)	10.7 (1.1)	84.6 (1.3)	134,524
Lotteries ***	1.7 (0.7)	8.0 (1.3)	90.2 (1.4)	46,006
Raffles/sweeps ***	0.8 (0.6)	3.6 (1.6)	95.7 (1.7)	25,139
EGMs ***	15.6 (3.2)	19.2 (3.8)	65.2 (4.7)	17,185
Racetrack betting	5.2 (2.3)	9.3 (2.6)	85.6 (3.4)	16,501
Keno	2.7 (1.3)	12.6 (5.2)	84.7 (5.3)	10,772
Casino table games	7.0 (3.4)	22.2 (8.7)	70.8 (8.9)	9,887
Instant scratch tickets	1.0 (0.8)	11.1 (5.5)	87.9 (5.5)	3,339
Sports betting *	10.0 (4.8)	22.5 (9.0)	67.4 (9.3)	2,881
Informal games	2.2 (2.4)	14.8 (13.2)	83.1 (13.6)	1,153
Bingo *	47.2 (25.3)	10.3 (7.5)	42.5 (21.1)	1,011
Other gambling	0.0 (0.0)	18.8 (13.0)	81.2 (13)	593
Non-sports betting	0.0 (0.0)	0.0 (0.0)	100.0 (0.0)	58

Significant association between highest spend activity and PGSI: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

6.8 Harms because of own gambling and help-seeking for at-risk gamblers

The questions collecting information from gamblers on harms experienced because of their own gambling were only asked of gamblers who answered one or more of the PGSI questions as occurring sometimes or more (i.e. at-risk gamblers). Figure 44 shows problem gambling risk by number of harms experienced from own gambling for at-risk gamblers only, while Table 24 shows this data along with population counts. This association, not surprisingly, was statistically significant, with the prevalence of problem gambling increasing from 3.1% for those who identified no harms from the list, increasing to 5.2% for those identifying one or two harms, and 23.3% for those identifying three or more harms, compared with 5.8% amongst all at-risk gamblers. Of those at-risk gamblers experiencing three or more problems, most (51%) were moderate risk gamblers, while 23% and 26% of them were problem gamblers and low risk gamblers respectively.

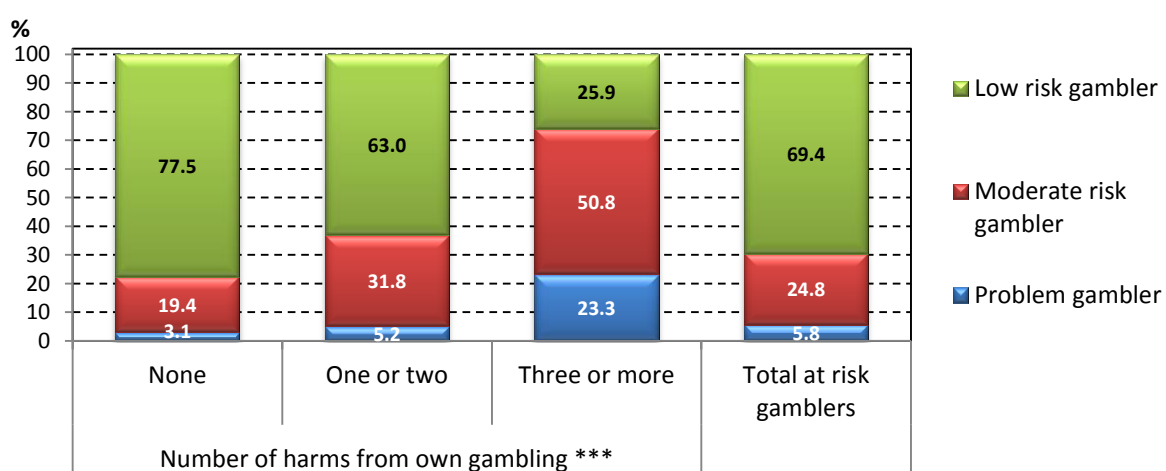


Figure 44: PGSI by number of harms from own gambling, at-risk gamblers

Significant association between highest spend activity and PGSI: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 24 includes weighted population counts and PGSI prevalence for at-risk gamblers by number of harms from own gambling ($p < 0.001$). Approximately 5,170 at-risk gamblers identified at least one harm because of their own gambling, while 2,505 experienced three or more harms.

Table 24: PGSI by number of harms from of own gambling, at-risk gamblers

	No harms	1 to 2 harms	3 or more harms	Total
PGSI ***				
Problem gamblers	485 (3.1)	138 (5.2)	583 (23.3)	1,206 (5.8)
Moderate risk gamblers	3,009 (19.4)	846 (31.8)	1,273 (50.8)	5,128 (24.8)
Low risk gamblers	12,053 (77.5)	1,680 (63.0)	649 (25.9)	14,383 (69.4)
Total	15,547 (100)	2,665 (100)	2,505 (100)	20,717 (100)

Significant association between number of harms and PGSI: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 25 lists what negative consequences at-risk gamblers experienced because of their own gambling. It is important to note that not all of the listed negative consequences are equal in the impact they cause on people's lives. Only 25% of at-risk gamblers identified at least one of the negative consequences. Endorsed negative consequences with at least 1,000 at-risk gamblers were: 'raided savings accounts/funds' (12.4%), followed by 'felt stress/ anxiety/depression' (11.9%), 'borrowed money from family/friends' (9.4%), 'ran out of money for bills' (8.8%),

'relationship problems with family' (6.6%), 'ran out of money for food' (6.4%), 'had a problem with work' (4.9%), and 'no money for rent/mortgage' (4.8%).

Table 25: Type of negative consequences experienced because of own gambling, at-risk gamblers

Negative consequences	% (SE)	N
No negative consequences endorsed	75.0 (3.9)	15,547
Any harm	25.0 (3.9)	5,170
Raided savings accounts/funds	12.4 (2.5)	2,566
Felt stress/anxiety/depression	11.9 (2.6)	2,475
Borrowed money from family/friends	9.4 (3.1)	1,957
Ran out of money for bills	8.8 (3.0)	1,824
Relationship problems with family	6.6 (2.8)	1,363
Ran out of money for food	6.4 (2.7)	1,326
Had a problem with work	4.9 (2.5)	1,018
Ran out of money for rent/mortgage	4.8 (2.5)	1,002
Relationship problems with friends	4.4 (1.8)	920
Debt collectors repossessed goods	3.3 (2.4)	676
Physical/verbal violence towards you	2.7 (1.2)	559
Sold/hocked possessions	2.1 (1.1)	434
Kids missed school	1.1 (0.9)	229
Did something illegal	0.5 (0.3)	100
Kids missed out on something	0.5 (0.2)	107
Other	0.4 (0.2)	79

The survey was supposed to collect information on help-seeking behaviour from all at-risk gamblers, following on from the at-risk gamblers experience of negative consequences because of their own gambling. However, an error in the data capture by the survey company meant that only 207 of 408 unweighted at-risk gamblers (weighted 9,410 from 20,717) were asked about their help-seeking behaviour. Only five of the 207 unweighted respondents sought help because of their own gambling, while for the weighted data this was 4.7% (N=437 people) seeking help. The most common response to who they sought help from were speaking to a family member or a friend, followed by a Doctor, online help, a counsellor or staff through a self-exclusion process.

6.9 Problem gambling and in-venue ATM access and spoken to by staff

More than half (59%) of at-risk gamblers accessed an in-venue ATM while in a gambling session (Table 26). This association did not vary by regions, age or gender.

Table 26: In-venue ATM access while in a gambling session, at-risk gamblers

In-venue ATM access while gambling	% (SE)	Population N
Accessed ATM for gambling	58.7 (4.9)	12,152
Did not access ATM	39.4 (5.0)	8,151
Didn't gamble in venue	1.9 (0.9)	388
Total at-risk gamblers (N)	100.0	20,692

The association between accessing an in-venue ATM for gambling and problem gambling risk for at-risk gamblers was statistically significant (Figure 45). Amongst gamblers who accessed an ATM for gambling, 9.2% were problem gamblers, 30%

moderate risk and 61% low risk gamblers, compared with 1%, 17.8% and 81% respectively for those who did not access at ATM.

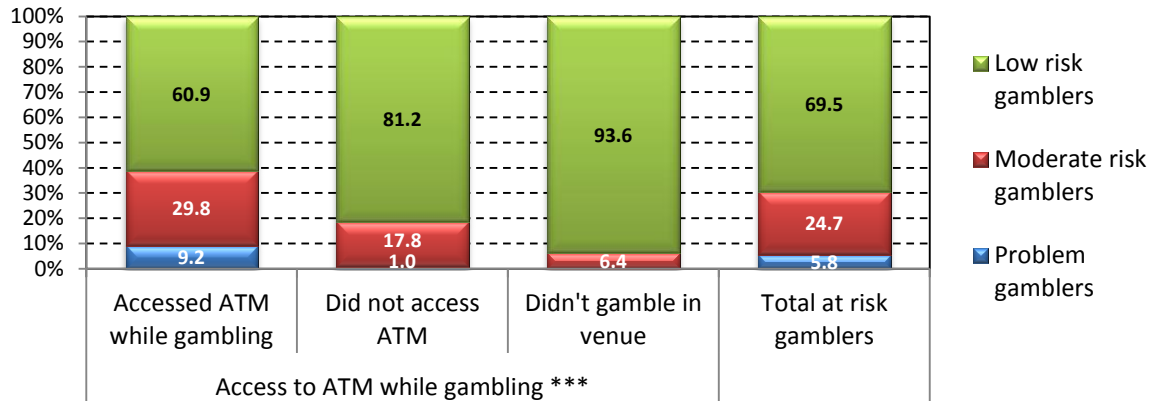


Figure 45: In-venue ATM access for gambling by PGSI, at-risk gamblers

Significant association between accessing an ATM and PGSI: *** p<0.001, ** p<0.01, * p<0.05

Most at-risk gamblers (57%) accessed an ATM just once while they were gambling, though 24% accessed the ATM twice and a further 13%, three times (Table 27). ATM access did not vary significantly by region, gender or age.

Table 27: Number of times accessed In-venue ATM while in a gambling session, at-risk gamblers

Number of times accessed ATM while gambling	% (SE)	Population N
None	5.1 (1.7)	622
Once	57.1 (5.5)	6,920
Twice	24.4 (4.7)	2,953
Three or more	13.4 (3.9)	1,629
Total who accessed ATM	100.0	12,124

Figure 46 shows the association between gambling risk for at-risk gamblers and number of times accessed ATM in a gambling session. This association was statistically significant, with problem gambling increasing the more times the gambler accessed an ATM.

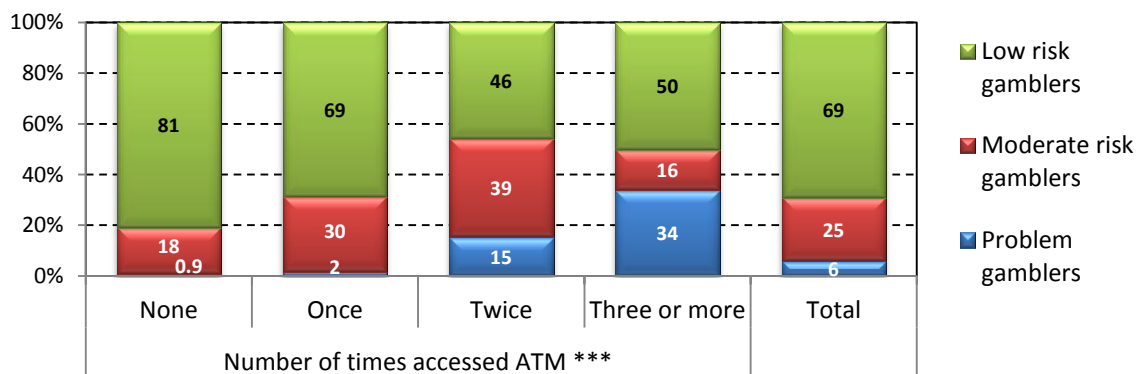


Figure 46: Number of times accessed ATM on average per gambling session by PGSI, at-risk gamblers

Significant association between accessing an ATM and PGSI: *** p<0.001, ** p<0.01, * p<0.05

Twelve percent of at-risk gamblers were spoken to about their gambling by a staff member of a venue (Table 28). This did not vary significantly across regions, age or gender.

Table 28: Spoken to by staff about own gambling, at-risk gamblers

In-venue ATM access while gambling	% (SE)	Population
		N
Spoken too about gambling	12.0 (4.8)	2,471
Not spoken to	88.0 (4.8)	18,187
Total at-risk gamblers (N)	100.0	20,658

Figure 47 shows that amongst at-risk gamblers, there was no significant difference between problem gambling risk and being spoken to by a staff member of a venue. That is, problem and moderate risk gamblers were no more likely to be spoken to by a staff member of a venue about their gambling than low risk gamblers.

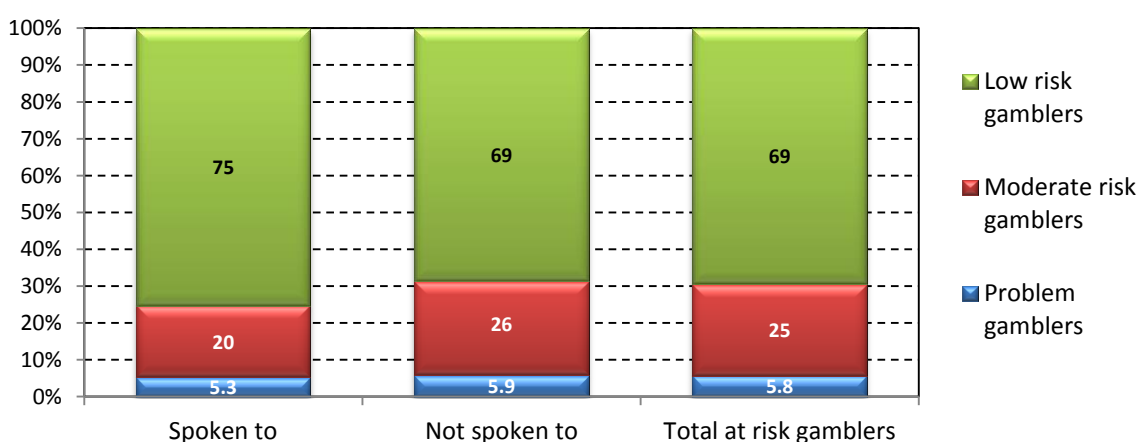


Figure 47: Spoken to by venue staff member about their gambling by PGSI, at-risk gamblers

6.10 Problem gambling by socio-demographic and socioeconomic characteristics

The following two tables show the prevalence of problem gambling risk by socio-demographic and socioeconomic factors, with factors showing a statistically significant association with problem gambling risk marked with an asterisk. Indigenous status and main language spoken at home were the only socio-demographic variables that had a statistically significant association with the PGSI (Table 29). Specifically, Indigenous compared with non-Indigenous people had a significantly higher prevalence in problem gambling (1.1% cf. 0.6%), moderate risk gambling (5.6% cf. 2.2%) and low risk gambling (12.4% cf. 6.9%). People who did not speak English at home were less likely to be problem gamblers (0.7% cf. 0%), but were more likely to be moderate risk gamblers (8.8% cf. 2.5%).

Table 29: Socio-demographic characteristics by PGSI, NT adult population

	Problem gambler % (SE)	Moderate risk % (SE)	Low risk % (SE)	None or little risk % (SE)	Non- gambler % (SE)
Northern Territory	0.7 (0.2)	2.9 (0.5)	8.1 (0.9)	64.3 (1.4)	24.0 (1.2)
Indigenous status *					
Non-Indigenous	0.6 (0.2)	2.2 (0.4)	6.9 (0.7)	66.7 (1.2)	23.7 (1.0)
Indigenous	1.1 (0.5)	5.6 (1.9)	12.4 (3.3)	55.9 (4.9)	25.0 (4.2)
Main language spoken at home ***					
English	0.7 (0.2)	2.5 (0.4)	8.3 (0.9)	66.6 (1.4)	21.9 (1.2)
Not English	0.0 (0.0)	8.8 (4.5)	6.0 (2.1)	32.7 (5.5)	52.5 (6.6)
Household type					
Couple: children living at home	0.7 (0.4)	3.2 (1.0)	8.1 (1.3)	62.1 (2.1)	25.9 (1.8)
Couple: no children/not living at home	0.5 (0.4)	1.9 (0.7)	5.5 (1.0)	70.2 (2.2)	21.9 (2.0)
Single parent: children living at home	0.8 (0.6)	2.1 (1.0)	11.7 (6.3)	57.4 (7.8)	28.0 (7.2)
Single: no children/not living at home	0.5 (0.3)	2.2 (1.0)	8.7 (2.2)	68.0 (3.7)	20.7 (3.1)
Group or shared house	1.1 (0.8)	4.7 (2.0)	12.0 (3.0)	59.5 (5.0)	22.7 (4.2)
Other	0.0 (0.0)	6.5 (3.9)	7.0 (3.4)	61.5 (8.4)	25.0 (6.6)

Significant association between socio-demographic factor and PGSI: *** p<0.001, ** p<0.01, * p<0.05

Table 30 shows the association between socioeconomic variables and problem gambling risk. Labour force status (p<0.001), FIFO/DIDO status (p<0.05), student status (p<0.05), highest education (p<0.001), and personal income (p<0.001) were all significantly associated with problem gambling risk. Unemployed, part-time employed, full-time students, those with Year 12 or below education, and those with personal income less than \$30,000 and more than \$100,000 per annum had higher problem gambling prevalence.

Table 30: Socioeconomic factors by the PGSI, NT adult population

	Problem gambler % (SE)	Moderate risk % (SE)	Low risk % (SE)	No or little risk % (SE)	Non-gambler % (SE)
Northern Territory ***	0.7 (0.2)	2.9 (0.5)	8.1 (0.9)	64.3 (1.4)	24.0 (1.2)
Labour force status ***					
Full-time employed	0.4 (0.2)	2.8 (0.6)	8.5 (1.1)	67.7 (1.7)	20.5 (1.4)
Part-time employed	1.4 (0.8)	1.9 (0.8)	7.7 (2.3)	53.7 (3.8)	35.3 (3.9)
Unemployed (looking for work)	4.0 (3.8)	0.5 (0.3)	4.7 (1.8)	59.8 (8.2)	30.9 (7.1)
NILF	0.3 (0.2)	4.8 (1.8)	6.8 (2.1)	60.4 (3.2)	27.6 (2.9)
Other	0.0 (0.0)	0.0 (0.0)	20.8 (11.0)	59.0 (12.7)	20.2 (8.5)
Fly-in Fly-out/Drive-in Drive-out *					
Other occupation/work type	0.7 (0.2)	2.8 (0.6)	7.1 (0.8)	66.3 (1.6)	23.2 (1.5)
FIFO/DIDO worker	0.1 (0.1)	2.1 (1.2)	15.3 (4.3)	61.3 (4.8)	21.2 (3.6)
Not in the labour force/unemployed	1.1 (0.8)	3.7 (1.3)	7.2 (1.7)	60.2 (2.9)	27.9 (2.6)
Student status *					
Full-time student	2.5 (2.1)	1.1 (0.8)	7.9 (2.7)	48.7 (8.6)	39.7 (7.9)
Part-time student	0.0 (0.0)	4.7 (2.0)	11.1 (2.4)	61.0 (4.2)	23.2 (3.8)
Not studying	0.6 (0.2)	2.8 (0.5)	7.8 (1.0)	65.6 (1.5)	23.1 (1.3)
Highest education ***					
Bachelor degree or higher	0.3 (0.1)	1.1 (0.3)	4.4 (0.8)	65.9 (2.0)	28.3 (2.0)
Diploma, technical Certificate III-IV	0.5 (0.2)	4.6 (1.2)	8.7 (2.0)	67.8 (2.7)	18.4 (2.1)
Finished Year 12 (Senior)	1.3 (1.0)	2.1 (0.7)	11.8 (2.2)	63.1 (3.1)	21.7 (2.5)
Finished Year 10 (Junior)	0.8 (0.7)	2.3 (1.0)	10.1 (3.0)	66.2 (4.4)	20.5 (3.5)
Less than Year 10	1.6 (1.2)	7.0 (4.2)	11.0 (3.7)	40.9 (6.2)	39.4 (6.5)
Gross personal income ***					
Less than \$30,000	1.1 (0.6)	4.3 (1.6)	8.8 (2.3)	46.3 (3.3)	39.5 (3.7)
\$30,000-\$49,999	0.3 (0.3)	2.0 (1.1)	10.1 (2.9)	65.3 (3.8)	22.3 (2.9)
\$50,000-\$69,999	0.3 (0.2)	4.2 (1.4)	7.1 (1.7)	65.0 (3.3)	23.2 (2.9)
\$70,000-\$99,999	0.5 (0.2)	2.0 (0.9)	9.5 (2.6)	66.4 (3.3)	21.6 (2.7)
\$100,000-\$119,999	1.0 (0.7)	1.3 (0.4)	6.7 (1.6)	71.3 (3.2)	19.7 (3.0)
\$120,000 or more	1.1 (1.0)	1.6 (0.6)	7.2 (1.7)	76.0 (2.7)	14.1 (1.9)
SEIFA Advantage-Disadvantage					
590-976 (more disadvantaged)	1.1 (0.7)	3.5 (1.3)	5.9 (1.5)	64.3 (3.7)	25.2 (3.4)
979-1021	0.3 (0.2)	2.2 (0.9)	10.1 (2.4)	60.1 (2.8)	27.3 (2.4)
1023-107	1.0 (0.4)	3.3 (1.0)	6.0 (1.0)	67.1 (2.0)	22.5 (1.7)
1073-112	0.4 (0.2)	2.6 (0.7)	10.5 (1.7)	66.2 (2.3)	20.3 (1.9)

Significant association between socioeconomic factor and PGSI: *** p<0.001, ** p<0.01, * p<0.05

6.11 Problem gambling by health and health risk factors

Table 31 shows the tabulation of the PGSI by self-assessed health and health risk factors. Note that standard errors will be higher in this table, compared with previous PGSI estimates, as the health-related variables were only collected in the sub-sample. Having an alcohol problem, smoking status, smoke-free home status, and exposure to personal stressors were all significantly associated with the PGSI. Those with an alcohol problem were more likely to be moderate and low risk gamblers compared to those without. Smokers had elevated risk across all PGSI categories compared with ex- and never smokers, while those living in houses where someone smokes inside had higher risk of problem and moderate risk gambling, compared with smoke free homes. People who were exposed to three or more personal stressors in the last year had higher problem gambling risk, compared with those experiencing less than three stressors.

Table 31: Health and health risk factors by the PGSI, NT adult population

	Problem gambler % (SE)	Moderate risk gambler % (SE)	Low risk gambler % (SE)	No or very low risk gambler % (SE)	Non- gambler % (SE)
Northern Territory	0.7 (0.2)	2.9 (0.5)	8.1 (1.0)	64.3 (2.3)	24.1 (2.2)
Self-assessed health					
Excellent	0.3 (0.2)	3.0 (1.5)	5.1 (1.5)	66.7 (5.4)	24.9 (4.8)
Very good	0.6 (0.3)	2.0 (0.7)	7.2 (1.9)	67.3 (3.8)	22.9 (3.7)
Good	0.5 (0.4)	3.3 (0.9)	11.0 (1.8)	58.3 (4.3)	26.9 (4.1)
Fair	1.9 (1.1)	4.3 (2.0)	6.3 (1.7)	70.3 (5.0)	17.1 (3.7)
Poor	2.2 (1.8)	1.7 (1.0)	9.0 (4.3)	70.8 (7.8)	16.2 (6.7)
CAGE Alcohol problem **					
No problem	0.8 (0.3)	2.0 (0.5)	5.5 (0.7)	69.8 (2.7)	21.9 (2.5)
Alcohol problem	0.8 (0.4)	5.6 (1.7)	16.4 (4.0)	58.2 (6.0)	19.0 (5.7)
Unknown/missing	0.2 (0.1)	4.2 (2.0)	11.7 (3.1)	45.3 (5.5)	38.7 (5.7)
Smoking status ***					
Never smoker	0.2 (0.1)	2.0 (0.5)	7.4 (1.1)	60.9 (3.4)	29.5 (3.2)
Ex-smoker	0.6 (0.4)	2.4 (0.7)	6.4 (1.1)	75.6 (2.7)	14.9 (2.3)
1 to 9 cigarettes per day	0.1 (0.1)	4.3 (3.6)	20.8 (7.9)	54.1 (10.5)	20.7 (8.6)
10 or more cigarettes per day	3.1 (1.5)	6.8 (2.7)	7.5 (2.6)	59.2 (8.5)	23.5 (7.3)
Someone smokes inside the home *					
Never	0.5 (0.2)	2.6 (0.5)	8.2 (1.1)	65.8 (2.4)	22.9 (2.2)
Sometimes	0.8 (0.7)	2.2 (1.1)	6.8 (3.1)	55.8 (10.9)	34.4 (10.6)
Most of the time or always	4.3 (2.9)	10.6 (5.4)	8.4 (3.4)	44.5 (13.7)	32.2 (11.8)
Financial stress					
Did not run out	0.5 (0.2)	2.4 (0.5)	7.8 (1.0)	65.0 (2.3)	24.4 (2.2)
Ran out last 12 months	2.5 (1.5)	8.2 (3.3)	12.0 (4.6)	56.1 (11.8)	21.2 (9.5)
Number of personal stressors **					
None	0.4 (0.2)	3.0 (1.2)	6.7 (1.3)	54.9 (4.9)	35.0 (4.9)
One or more	0.8 (0.3)	2.6 (0.5)	8.6 (1.2)	68.1 (2.5)	20.0 (2.1)
Number of personal stressors **					
None	0.4 (0.2)	3.0 (1.2)	6.7 (1.3)	54.9 (4.9)	35.0 (4.9)
One or two	0.3 (0.1)	1.8 (0.5)	8.9 (1.6)	71.0 (3.2)	18.1 (2.4)
Three or more	1.2 (0.6)	3.4 (0.9)	8.3 (1.9)	65.4 (3.9)	21.8 (3.4)

Significant association between health risk factor and PGSI: *** p<0.001, ** p<0.01, * p<0.05

6.12 Problem gambling risk by harm from someone else's gambling

The survey collected information from people on whether they had been negatively affected by another person's gambling in the last year. The questions on negative consequences from another person's gambling are analysed more thoroughly in the next chapter. For this chapter problem gambling risk estimates by whether the gambler was negatively affected by someone else's gambling, number of negative consequences and relationship to person whose gambling negatively affected them are presented. To improve the accuracy of estimates shown in the next few figures, problem and moderate risk gambling categories of the PGSI have been collapsed.

Figure 48 shows that there was no significant association ($p=0.11$) between the PGSI and being negatively affected from someone else's gambling. However, the percentage of at-risk gamblers amongst those affected by someone else's gambling was 22% compared with 10% in those not affected by another person's gambling.

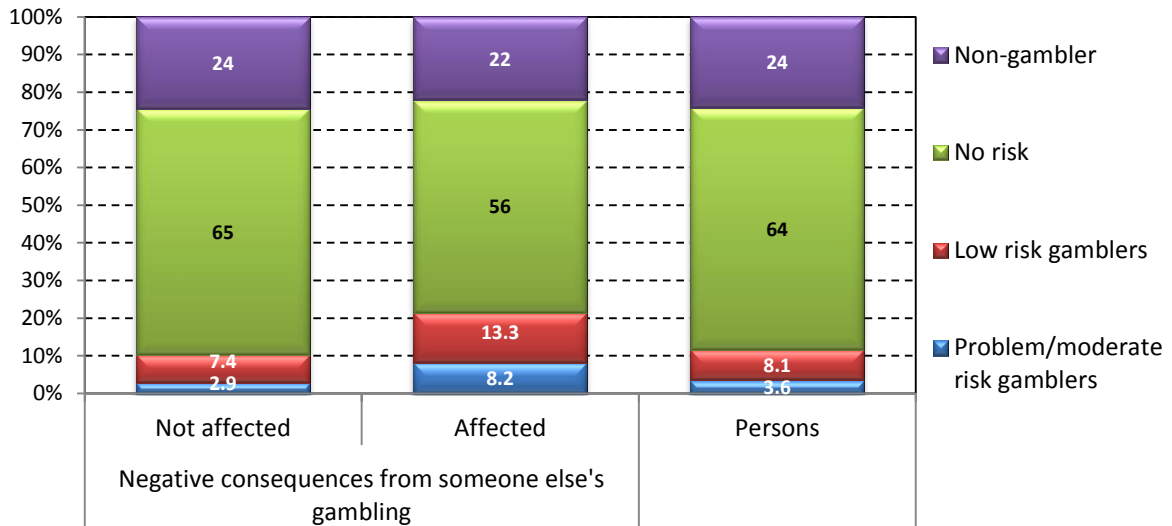


Figure 48: Negative consequences from someone else's gambling by PGSI, NT adult population

Figure 49 shows the association between problem gambling risk and the number of negative consequences experienced because of another person's gambling. This association was not statistically significant, though a clear trend is observable in the problem/moderate risk gamblers group with increasing prevalence with the more harms they experienced from someone else's gambling. There were also fewer non-gamblers in the group that were affected by three or more negative consequences.

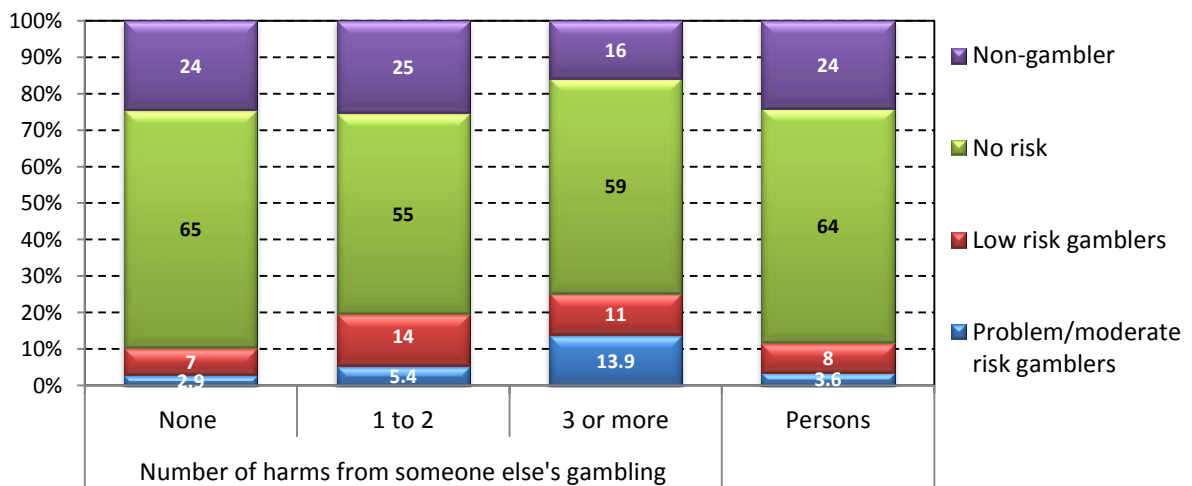


Figure 49: Negative consequences from someone else's gambling by PGSI, NT adult population

Table 32 shows problem gambling prevalence for people negatively affected by another person's gambling. Caution is advised interpreting estimates in this table, as most have large standard errors. Problem/moderate risk gambling was significantly higher for people who reported a brother or sister (44.5%) as causing the negative consequences and lower for acquaintance (4.5%), compared with all people negatively affected (8.2%).

Table 32: Person whose gambling negatively affected respondents by PGSI, NT adult population affected by someone else’s gambling

	Problem/ moderate risk gamblers % (SE)	Low risk gamblers % (SE)	No risk gamblers % (SE)	Non-gambler % (SE)	Persons N
Parent	2.7 (2.0)	3.2 (2.8)	75.8 (17.8)	18.3 (17.4)	6,343
Son or daughter	0.0 (0.0)	6.8 (5.7)	34.0 (23.4)	59.3 (25.9)	741
Friend	10.9 (5.9)	18.6 (9.1)	65.6 (11.9)	4.9 (3.1)	5,993
Work colleague	22.2 (18.4)	25.7 (13.3)	24.5 (13.3)	27.6 (17.1)	775
Spouse	16.8 (11.9)	8.2 (4.4)	44.3 (18.0)	30.7 (22.2)	1,329
Acquaintance **	4.5 (5.5)	0.5 (0.6)	21.3 (16.0)	73.7 (19.5)	1,905
Ex-partner	0.0 (0.0)	20.6 (16)	74.2 (18.5)	5.2 (5.0)	1,004
Brother or sister ***	44.5 (21.9)	36.4 (19.7)	14.7 (11.6)	4.4 (4.6)	1,211
Other family member	2.2 (2.3)	31.7 (18.2)	40.0 (19.3)	26.2 (18.9)	1,819
Parent in-law	0.0 (0.0)	0.0 (0.0)	88.3 (10.5)	11.7 (10.5)	910
Other	0.0 (0.0)	0.0 (0.0)	82.1 (16.5)	17.9 (16.5)	359
Total affected	8.2 (2.9)	13.3 (4.0)	56.3 (8.6)	22.1 (7.4)	23,034

Significant association between person negatively affected by and PGSI: *** p<0.001, ** p<0.01, * p<0.05

6.13 Problem gambling by motivations for gambling

Tables 33 and 34 show problem gambling risk for the five domains of the Gambling Motivations and Expectancies Scale. All five domains were significantly associated with problem gambling risk. Problem gambling prevalence was highest amongst people who screened as having a high motivation of gambling to ‘escape’ (9.5% cf. 0.4%), followed by ‘money’ (2.4% cf. 0.6%). Table 34 shows the significant positive association between problem gambling risk and the number of motivations a respondent scored high on for their gambling.

Table 33: Gambling motivations ‘excitement’, ‘escape’ and ‘ego’ by PGSI, NT adult gamblers

	All gamblers	Excitement ***		Escape ***		Ego ***	
		Less	High	Less	High	Less	High
Problem gambler	0.9 (0.3)	0.5 (0.2)	2.8 (1.3)	0.4 (0.2)	9.5 (4.2)	0.9 (0.3)	2.3 (1.4)
Moderate risk	3.8 (0.7)	2.7 (0.6)	9.0 (2.9)	3.1 (0.7)	16.5 (4.9)	3.5 (0.7)	15.2 (7.2)
Low risk	10.7 (1.3)	9.0 (1.1)	18.7 (5.2)	10.1 (1.3)	20.6 (6.6)	10.2 (1.3)	30.1 (11.9)
No risk	84.6 (1.5)	87.7 (1.3)	69.4 (6.4)	86.4 (1.5)	53.4 (8.4)	85.4 (1.5)	52.4 (12.3)
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Population (N)	133,992	110,822	23,170	126,390	7,602	130,455	3,537

Significant association between gambling motivation and PGSI: *** p<0.001, ** p<0.01, * p<0.05

Table 34: Gambling motivations ‘social’ and ‘money’ by PGSI, NT adult gamblers

	All gamblers	Social ***		Money ***		Number of high motivations ***		
		Less	High	Less	High	0	1-2	3-5
Problem gambler	0.9 (0.3)	0.6 (0.2)	2.0 (1.1)	0.6 (0.2)	2.4 (1.4)	0.2 (0.1)	1.2 (0.5)	8.4 (4.8)
Moderate risk	3.8 (0.7)	3.2 (0.8)	5.7 (1.6)	2.7 (0.6)	9.9 (2.8)	1.1 (0.4)	6.7 (1.6)	17.1 (5.8)
Low risk	10.7 (1.3)	8.2 (1.1)	18.9 (4.2)	9.7 (1.4)	16.2 (3.6)	7.2 (1.2)	14.5 (2.7)	27.3 (8.5)
No risk	84.6 (1.5)	88.1 (1.4)	73.4 (4.9)	86.9 (1.6)	71.5 (4.8)	91.5 (1.3)	77.6 (3.4)	47.1 (9.6)
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Population (N)	133,992	101,996	31,995	113,514	20,478	79,001	49,400	5,591

Significant association between gambling motivation and PGSI: *** p<0.001, ** p<0.01, * p<0.05

6.14 Multivariable model of PGSI score

In previous sections of this chapter, all statistical associations were bivariate. That is, they were between two variables only, namely the PGSI and the explanatory variable of interest (e.g. motivations, age, gender etc). However, significant bivariate associations between explanatory variables and the PGSI may not remain significant, when controlling or adjusting for other variables in a multivariable model predicting PGSI score. Therefore, in order to determine which variables are significantly associated with a person's PGSI score, while controlling for other significant predictors, a multivariable (also known as multivariate) model is required. The distribution of PGSI score is well suited to a negative binomial regression model, with this model accommodating the large number of zero scores (i.e. no or very little risk) amongst gamblers.

Due to the large number of explanatory variables available for predicting PGSI score, a blocked approach is used to determine which variables have a significant multivariable adjusted association with PGSI score. Explanatory variables were divided into domains of socio-demographic and socioeconomic; health risk factors; gambling participation (for each activity and the number of activities) and motivations. For each domain, all variables showing a moderately significant (p<0.10) association with the PGSI score were entered into a model simultaneously, and backward selection applied, with variables removed one by one, starting with the least significant one, until all variables contained in the model for that domain were significant at p<0.05. Once this process was completed for each domain, all significant variables from each domain were entered simultaneously into a model and backward selection again carried out until all variables remained significant at p<0.05.

Table 35 shows the final negative binomial regression model for PGSI score, with variables from all domains represented in this model. The table includes the distribution of explanatory variables, the percentage problem/moderate risk gambler, the multivariable adjusted PGSI score ratio (SR) from the negative binomial regression, and the significance between the reference category (denoted by 1.0) and other categories for that explanatory variable. The explanatory variable having the largest effect size on PGSI score was EGM frequency of play, with a score ratio (SR) of 13.28 (95% CI 7.63-23.1) for weekly or more EGM players, and 6.38 (95% CI 3.17-12.8) for monthly players, compared with non-EGM gamblers. The SR indicates that on average, weekly EGM players PGSI

score was 13 times that of non-EGM gamblers (the reference category). Experiencing financial stress was the variable with the second largest effect size on the PGSI score. Compared with people who had not ran out of money in the last year, those who had run out in the last 2 weeks had a score ratio of 7.56 (95% CI 3.11-18.4), while those who ran out in the last year has a score ratio of 2.48 (95% CI 1.22-5.03). Compared with gamblers who played only one activity, those playing three (SR 2.94 [95% CI 1.61-5.37]), four (SR 2.45 [95% CI 1.28-4.67]) and five or more (SR 3.68 [95% CI 1.92-7.06]) activities all had significantly higher PGSI scores. People with Year 10 or less education had significantly higher PGSI scores (SR 2.67 [95% CI 1.20-5.94]) than those with a Bachelor degree or more. Not speaking English at home was associated with significantly higher PGSI scores (SR 5.03 [95% CI 2.61-9.73]), as was identifying as Indigenous (SR 1.94 [95% CI 1.16-3.27]). People who screened as having personal alcohol problems in the last year had significantly higher PGSI scores (SR 2.18 [95% CI 1.37-3.49]) than those who did not have an alcohol problem (as were those who did not answer this question (SR 1.84 [95% CI 1.16-2.93])). Lastly, gamblers in the top two quartiles of the 'money' motivation scale had significantly higher PGSI scores (SR 2.91 [95% CI 1.62-5.24] and 2.88 [95% CI 1.63-5.09]) compared with those in the lowest money motivation quartile. The estimated amount of PGSI score variance explained by the model could only be calculated using unweighted data, with the unweighted model giving an adjusted R^2 of 13.5%.

Table 35: Multivariable negative binomial regression model of PGSI score and distribution of explanatory variables and problem/moderate risk gambling, 2015 NT adult gamblers

Adjusted R²=13.5% Significant multivariable adjusted explanatory variables	Distribution % (SE)	PG & MR gambler % (SE)	PGSI Score Ratio (95% CI)	p-value¹
EGMs ***				
No EGM betting	64.0 (3.1)	2.4 (0.8)	1.0	-
Less than monthly	29.3 (3.1)	4.5 (1.3)	1.28 (0.79-2.08)	0.309
1-3 times per month	5.0 (1.4)	17.9 (7.2)	6.38 (3.17-12.8)	<0.001
1 or more times per week	1.7 (0.4)	56.2 (9.9)	13.28 (7.63-23.1)	<0.001
Casino table games ***				
No casino table games	81.6 (2.8)	3.6 (0.7)	1.0	-
Less than monthly	16.3 (2.7)	10.4 (3.2)	2.39 (1.51-3.80)	<0.001
Monthly or more	2.1 (1.1)	5.2 (4.0)	1.94 (0.43-8.78)	0.389
Number of gambling activities ***				
One	20.5 (2.1)	1.1 (0.7)	1.0	-
Two	33.1 (3.3)	2.1 (1.1)	1.09 (0.60-2.00)	0.770
Three	17.1 (2.0)	4.9 (1.5)	2.94 (1.61-5.37)	<0.001
Four	14.0 (1.8)	7.8 (2.5)	2.45 (1.28-4.67)	0.007
Five or more	15.2 (1.9)	12.3 (3.1)	3.68 (1.92-7.06)	<0.001
Highest education level ***				
Bachelor or higher	27.0 (2.3)	2.2 (0.6)	1.0	-
Certificate III, IV, & Diploma	35.0 (2.8)	5.8 (1.5)	1.05 (0.61-1.80)	0.857
Completed year 12	13.2 (1.5)	5.3 (1.9)	1.58 (0.92-2.69)	0.095
Completed year 10	19.7 (3.3)	3.1 (1.3)	0.54 (0.27-1.08)	0.082
Less than year 10	5.1 (1.6)	14.7 (8.1)	2.67 (1.20-5.94)	0.016
Main language spoken at home ***				
English	97.3 (0.6)	4.0 (0.7)	1.0	-
Not English	2.7 (0.6)	28.9 (12.2)	5.03 (2.61-9.73)	<0.001
Indigenous status *				
Non-Indigenous	78.5 (3.6)	3.6 (0.6)	1.0	-
Indigenous	21.5 (3.6)	8.8 (3.0)	1.94 (1.16-3.27)	0.012
Ran out of money for essentials ***				
Did not run out of money in last 12 months	90.5 (2.6)	3.8 (0.7)	1.0	-
Ran out in last 12 months	7.2 (2.6)	12.8 (6.2)	2.48 (1.22-5.03)	0.012
Ran out in last 2 weeks	2.3 (0.6)	16.2 (8.0)	7.56 (3.11-18.4)	<0.001
Personal alcohol problems last 12 months ** 2				
No problems	71.2 (2.5)	3.5 (0.7)	1.0	-
Alcohol problems	16.0 (1.9)	8.0 (2.2)	2.18 (1.37-3.49)	0.001
Missing	12.8 (1.7)	7.1 (3.2)	1.84 (1.16-2.93)	0.010
Motivation 'money' ***				
1 st quartile (less motivation)	27.4 (2.4)	1.4 (0.8)	1.0	-
2	33.6 (3.0)	3.1 (0.8)	1.35 (0.75-2.41)	0.316
3	18.6 (2.8)	5.7 (1.8)	2.91 (1.62-5.24)	<0.001
4 th quartile (most motivation)	20.3 (2.3)	10.9 (2.9)	2.88 (1.63-5.09)	<0.001
All gamblers total	100.0	4.7 (0.8)	-	-
Population	133,440	-	-	-

NOTES: Global p-value for variable *** = p<0.001, ** = p<0.01, * = p<0.05
1 = p-value for comparison with reference category; 2 = CAGE alcohol problem screen