

EGMS – CAN THEY BE OPERATED AND REGULATED IN ETHICAL AND LESS HARMFUL WAYS

Keynote address

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From Browne et al (2016)

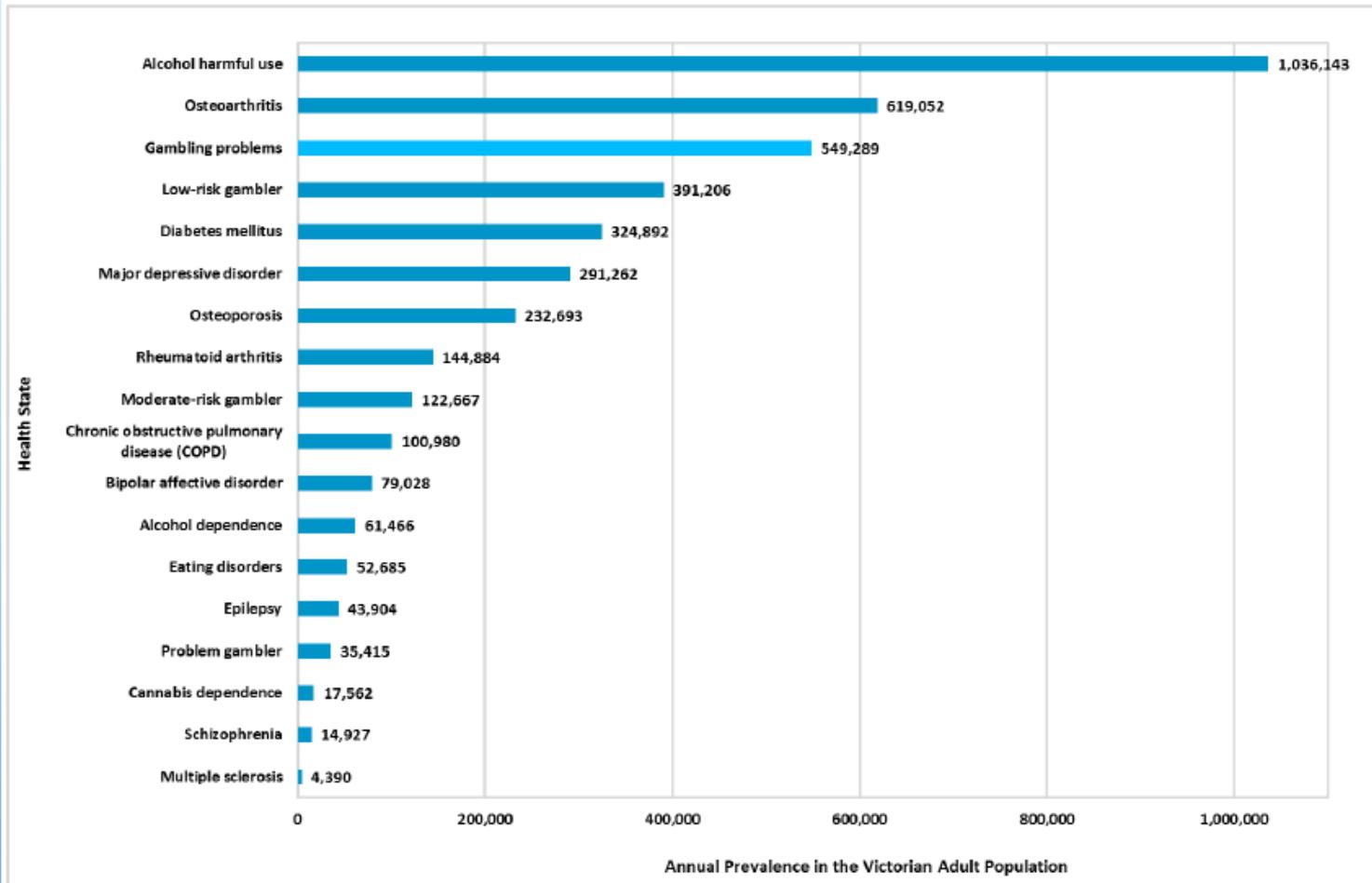


Figure 16. Annual prevalence of gambling problems (by PGSI category) and other health states in the Victorian adult population

Prevention paradox

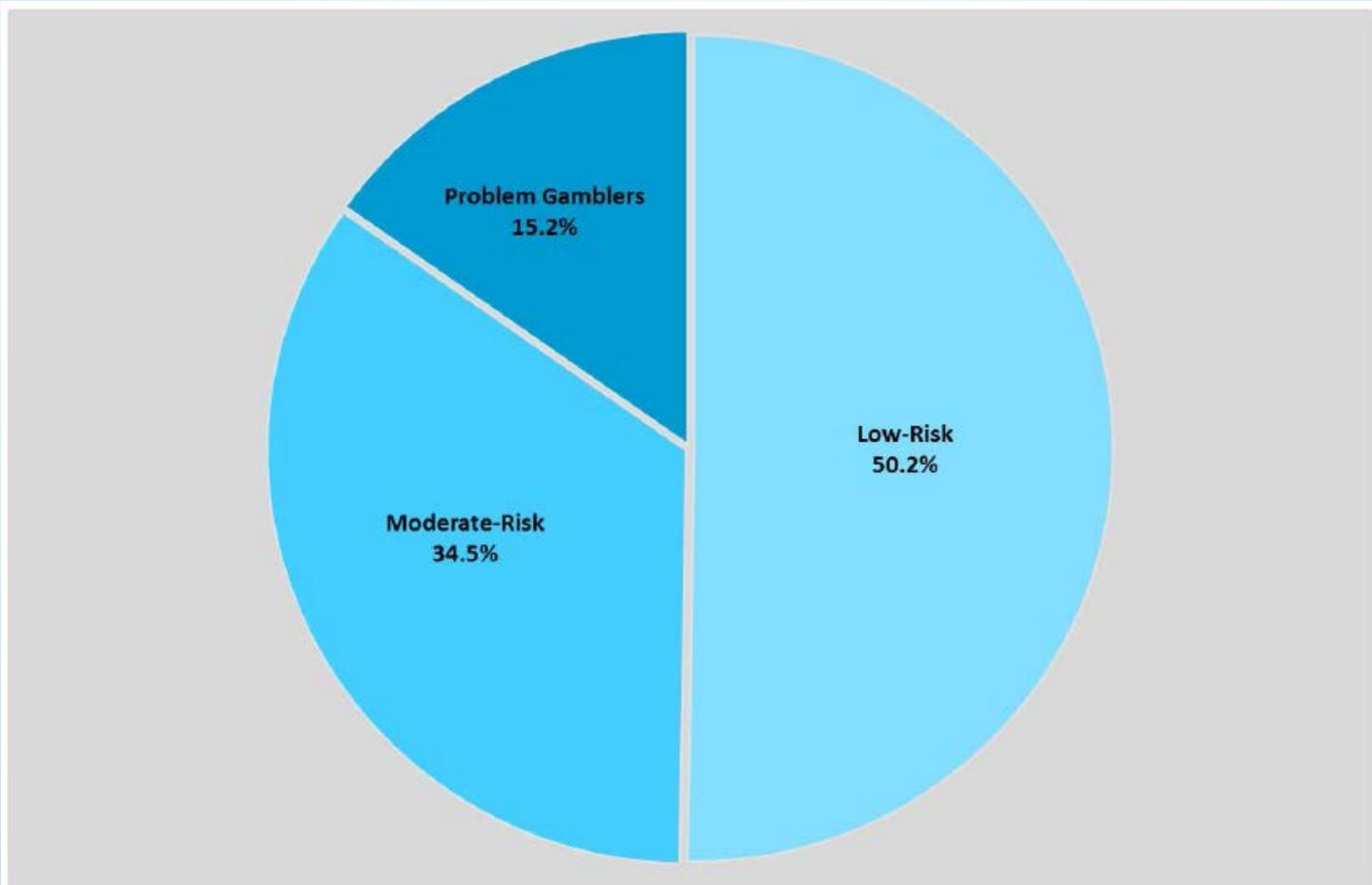


Figure 17. Proportion of harm in Victorian population by PGSI risk category

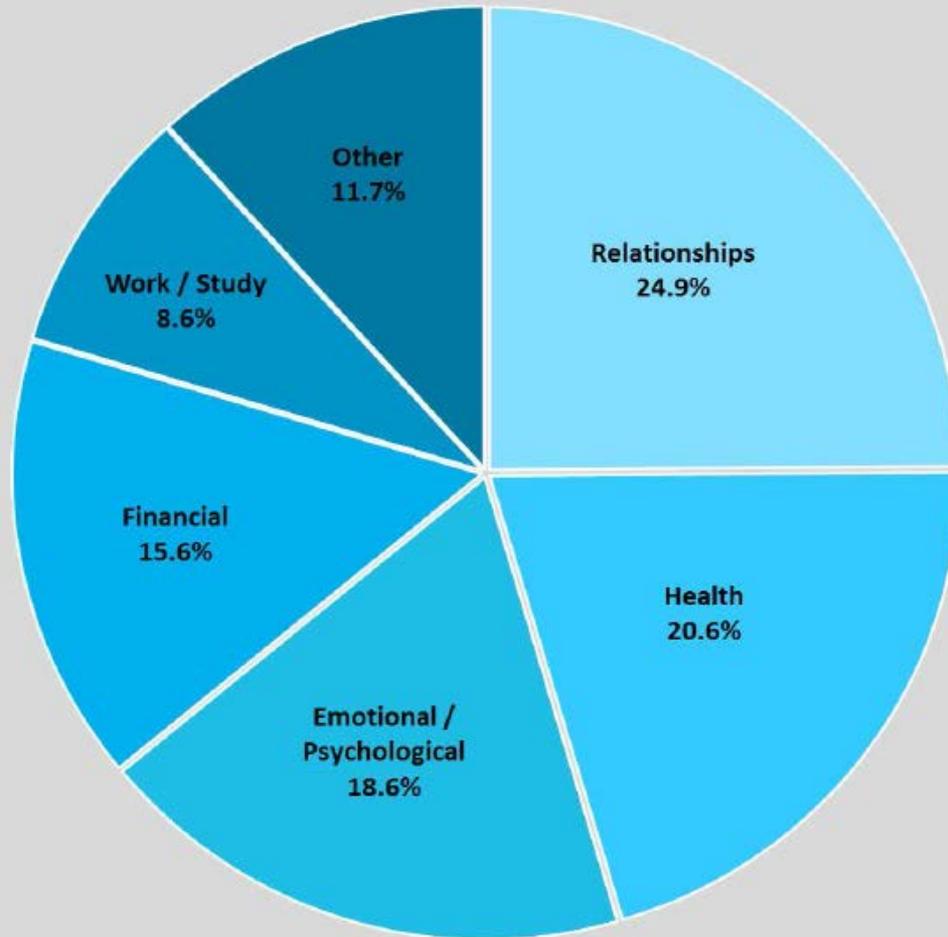


Figure 19. Proportion of harm contributed by each domain, as calculated by random forest variable importance measure

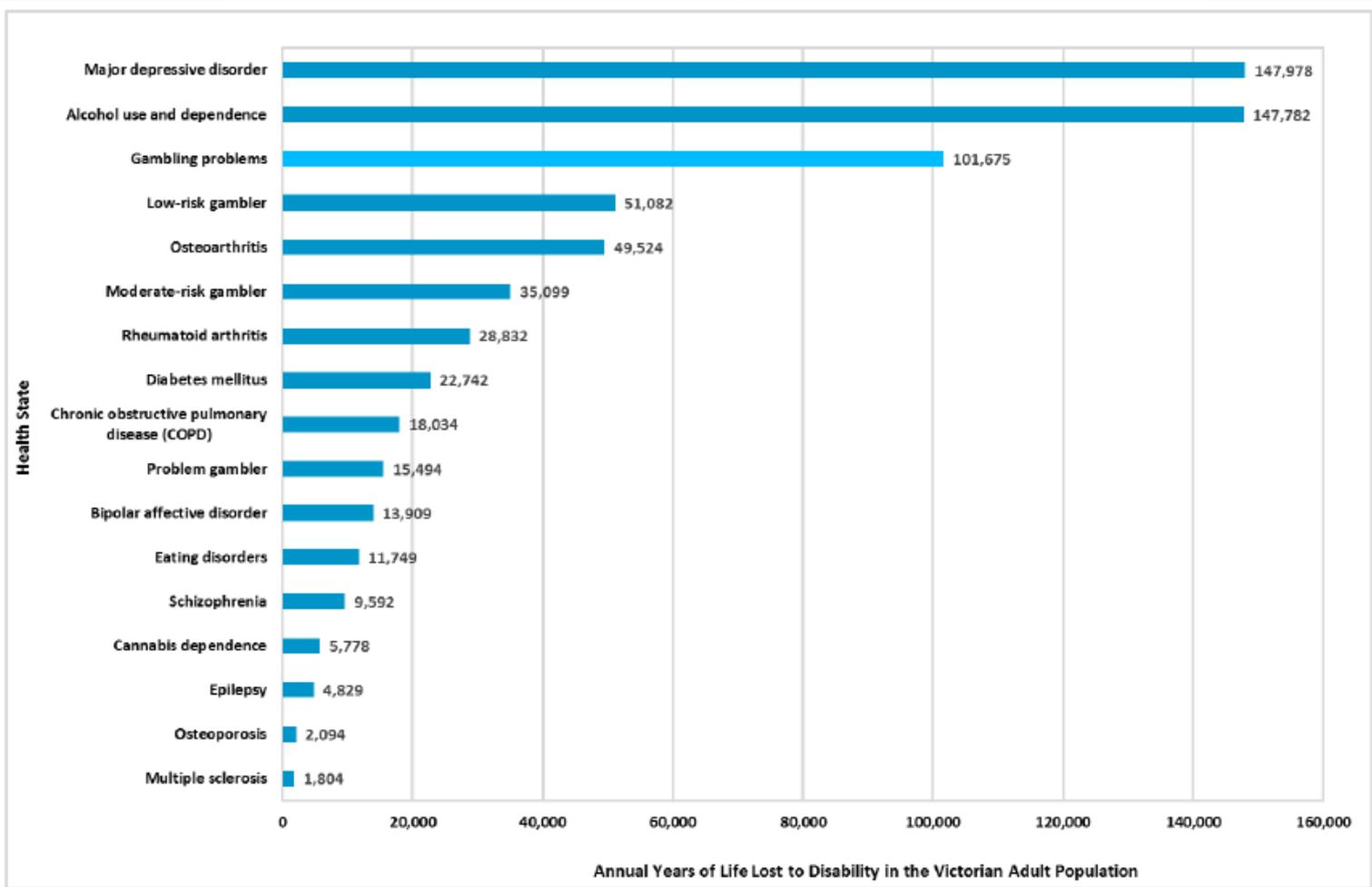


Figure 20. YLD₁ in the Victorian adult population – gambling problems versus other health states

- “Gambling, like rust, never sleeps. Neither does the host, nor society.”

Gambling participation & gambling-related harms change over time – driven by:

- Gambling mix & availability
- Economic, demographic & social factors
- Adaptation – individual, societal

- Unprecedented expansion of legal, commercial gambling in recent decades
- Some gambling forms strongly associated with problem gambling
- Gambling participation & gambling-related harms including social costs not randomly distributed
- Problem gambling – males, young adults/teens, low income, single marital status at high risk
- Some studies – also low occupational status/education, minority ethnic status, large city residence

EGMS – ‘CRACK COCAINE OF GAMBLING’?

- The gambling form with greatest addictive potency and cause of loss control and harm?
- EGMS – slots, pokies, VLTs, FOBTs ...

THE NATURE AND DESIGN OF EGMS

- Dickerson, Haw & Shepherd (2003) – study tracked regular EGM participants over time.
- Most lost control over session spend and frequency of venue visits – not atypical.
- Some individual characteristics contributed (non-productive coping, depression, impulsivity) – but only 25% outcome variance.
- Concluded impaired control and problem development ‘natural’ consequence of regular, high intensity play and not confined to a minority of constitutionally predisposed or mentally disordered

- Very strong relationship between number of machines and expenditure (but exceptions, e.g. Victoria)
- When widely distributed dominate within a few years – e.g. Australian states and New Zealand 50%-60% total gambling revenue
- Also reflected in change of help-seeking populations – most report major problem with EGMs
- Associated with ‘feminisation’ of gambling and problem gambling
- Often concentrated in high deprivation neighbourhoods – and proximity associated with participation and harm
- Regressive and contribute to economic, health and social disparities

- High percentage of regular EGM players problem gamblers (15% - 30%)

Table 5

Prevalence of probable pathological/problem gambling (SOGS 3+) among past 30 days participants in major gambling forms, 1998 and 2009 (SOGS-R)

	Swegs (N = 7,037) % (CI)	Swelogs (N = 7,530) % (CI)
Total sample	2.6 (2.1–3.1)	3.8 (3.1–4.5)
Any gambling past 30 days/past month		
Lottery/Lotto	2.2 (1.7–2.7)	2.9 (2.2–3.6)
Sports	4.7 (3.6–5.8)	9.2 (7.3–11.1)
Horses	4.4 (3.1–5.7)	4.3 (2.7–5.9)
Machines	10.5 (6.5–14.5)	17.7 (14.0–21.4)
Casino table games	14.7 (10.6–18.8)	17.3 (12.5–22.1)
Poker	14.0 (9.4–18.6)	19.3 (16.0–22.6)
Bingo	6.3 (1.7–10.9)	18.4 (11.0–25.8)
Gambling on the internet		N/A
TV-games		8.8 (5.6–12.0)

- Problem gamblers account for high percentage of EGM expenditure; Williams & Wood (2004) 61% EGMs, 52% track, 35% casino table games, 19% lotteries
- Are EGMs the most harmful gambling form?
- Does the level of harm justify special public health attention to EGMs beyond that given to other gambling forms?
- Could this detract from more effective measures?

AVAILABILITY, EXPOSURE & ADAPTATION

Abbott et al (1999; 2004) & Shaffer et al (2004)

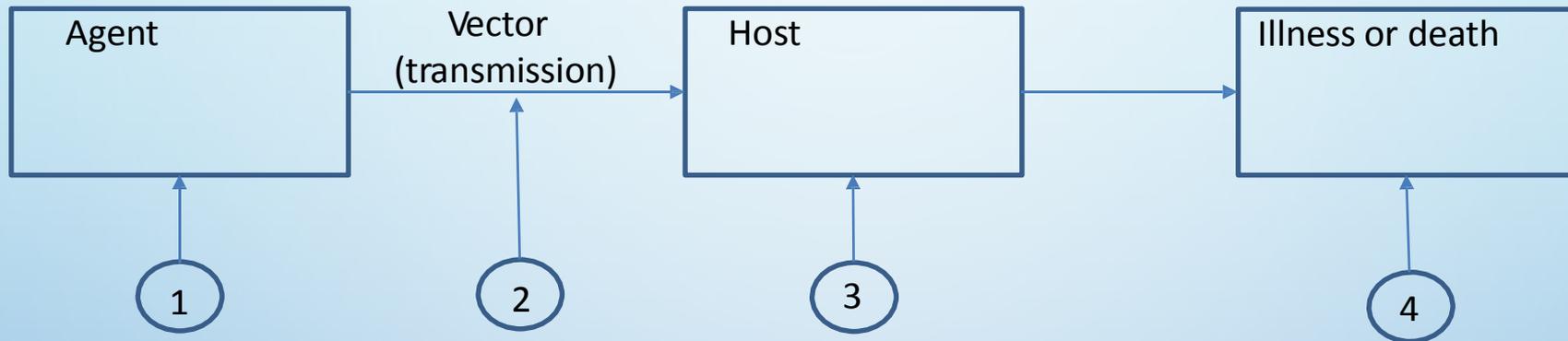
- Maintain relationships between availability & problems/harms complex
- Consideration needs to be given to availability, exposure, exposure duration, individual & environmental factors that moderate exposure effects

HYPOTHESES

Abbott (2006)

- During exposure to new gambling forms, particularly EGMs and other continuous activities, previously unexposed individuals, population sectors & societies are at high risk for the development of gambling problems
- Over time – years rather than decades – adaptation (‘host’ immunity & protective environmental changes) typically occurs and problem levels decrease, even in the face of increasing exposure
- Adaptation can be accelerated by regulatory & public health measures
- While strongly associated with problem development, EGMs give rise to more transient problems

TRADITIONAL PUBLIC HEALTH MODEL



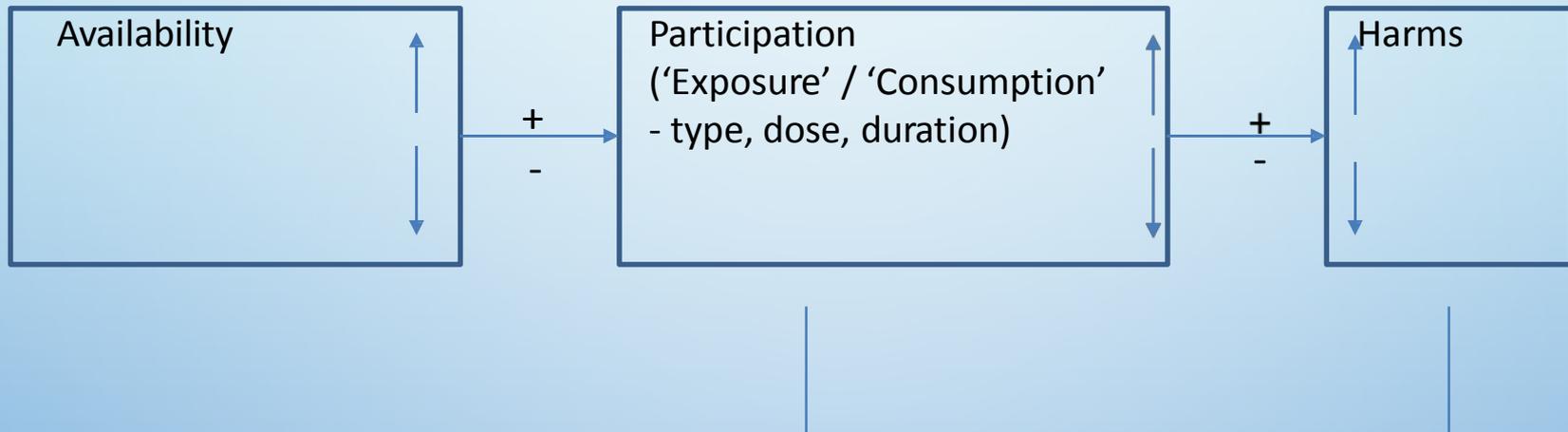
Strategies

- Eliminate or reduce prevalence and / or distribution of agent (1)
- Prevent or reduce transmission (2)
- Strengthen host resistance (3)
- Secondary and tertiary prevention (4)

More complex in the case of NCDS

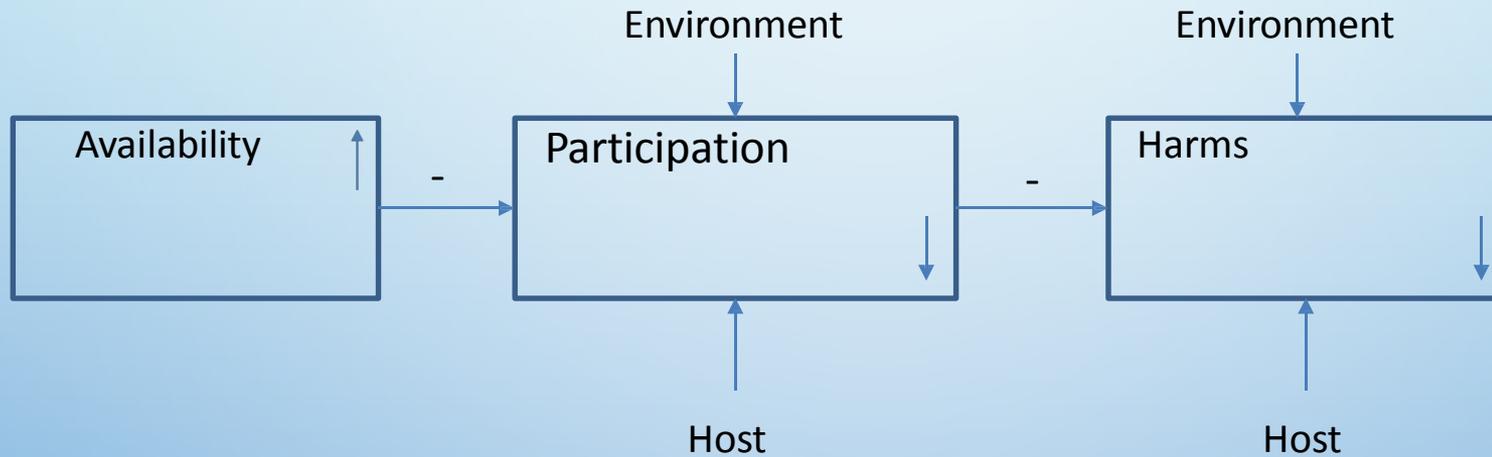
- Multicausal – target multiple risk and protective factors
- Prevalence reduced by reducing incidence and duration of harms

AVAILABILITY HYPOTHESIS



Total consumption model

ADAPTATION HYPOTHESIS



STUDIES SUGGEST BOTH EXPOSURE AND ADAPTATION OCCURRING

Storer, Abbott & Stubbs (2009)

- Study examined 34 Australian and New Zealand prevalence studies in relation to EGM density and time
- Multivariate linear regression

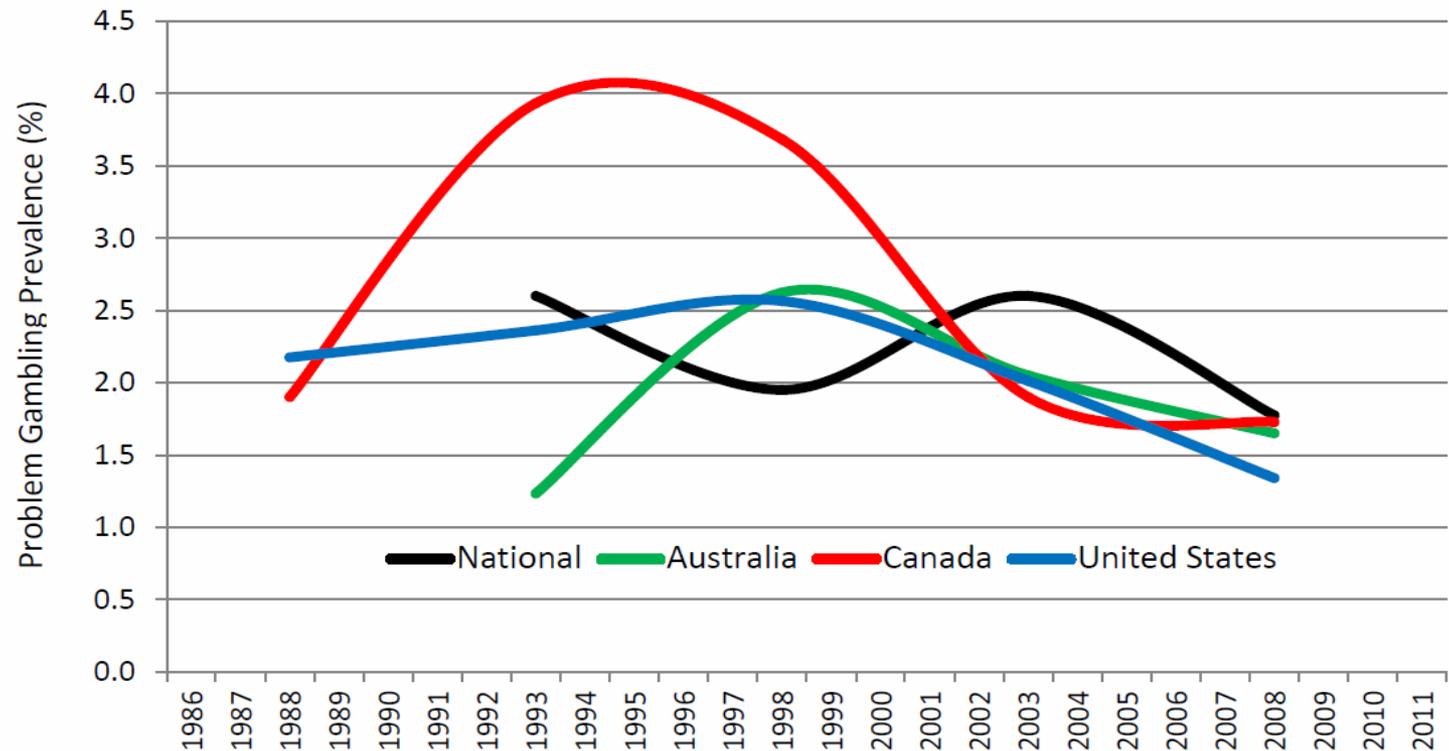
$$\text{SOG5} = 182.17 + 81.989 \text{ PERCAP} - 0.09078 \text{ YEAR} \quad R^2 = 0.72 \text{ (adjusted)}$$

(45.96)	(9.649)	(0.02298)	(s.e.)
0.000	0.000	0.000	<i>p</i>
0.593	0.845	-0.591	Partial correlation

- Prevalence increases with increasing EGM density – predicts increase of 1 EGM in an area results in an increase of 0.6-1.0 problem gamblers
- Prevalence decreases with time – annual decrease of 0.09% (1.14-0.04%)

STUDY EXAMINED 190 PREVALANCE STUDIES IN RELATION TO TIME

Figure 5. Standardized Problem Gambling Prevalence Rates over Time
(5 Year Smoothed Averages).



R.J. Williams., R.A. Volberg., R.M.G. Stevens. 2012 The Population Prevalence of Problem Gambling: Methodological Influences, Standardized Rates, Jurisdictional Differences, and Worldwide Trends. Report Prepared for the Ontario Problem Gambling Research Centre & the Ontario Ministry of Health and Long Term Care

SOME RISK FACTORS CHANGING

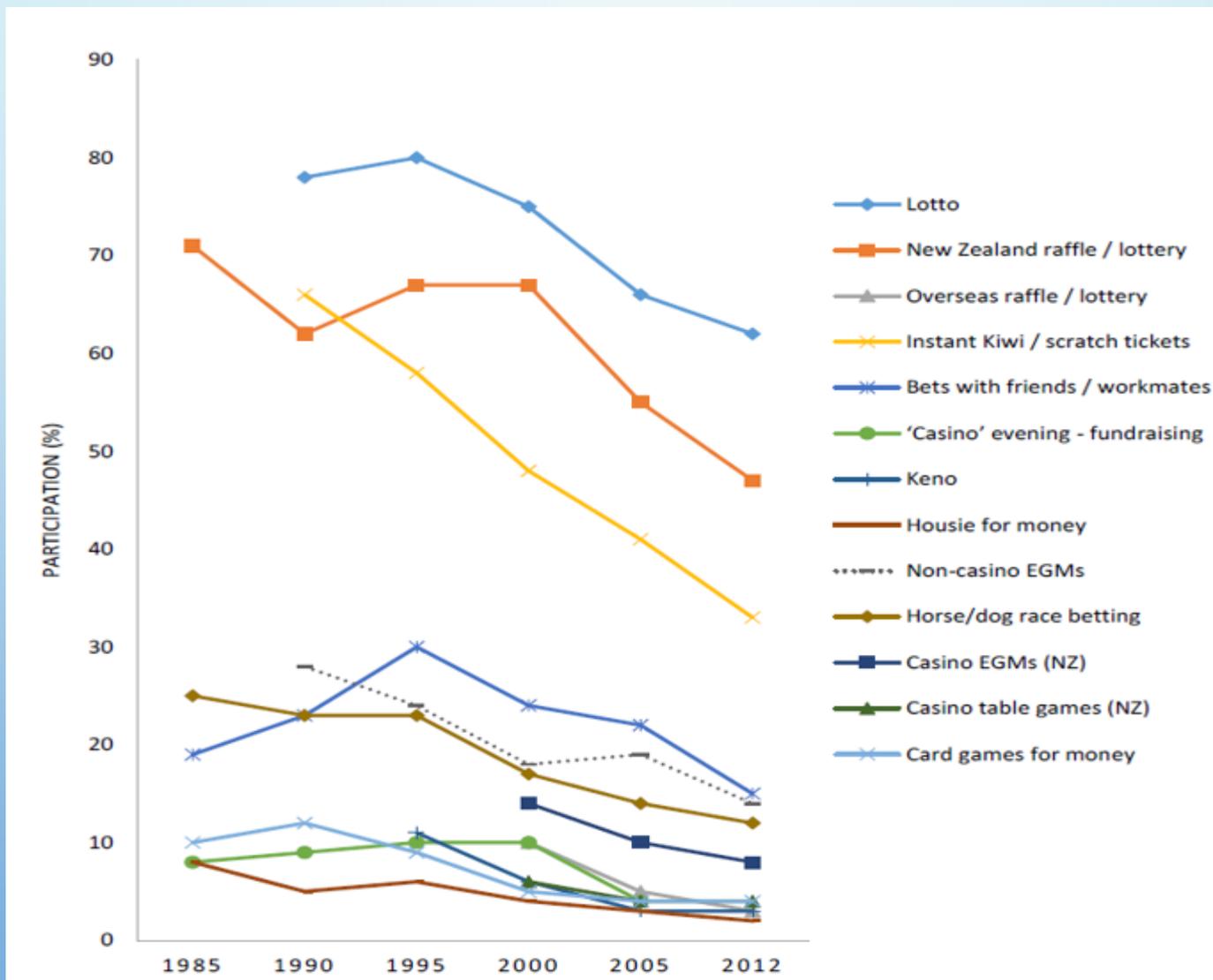
- In part related to changed gambling mix
- New Zealand 1991-1999 - problem gamblers “feminised, aged & moved a little upmarket”
- Followed introduction of EGMS, casinos & diversification of lottery products
- ‘Feminisation’ also in Australia, some parts of North America
- Significant reduction in regular participation in continuous forms & problem prevalence – but some groups continue to be at elevated risk

NEW ZEALAND: CHANGES 1985-2015

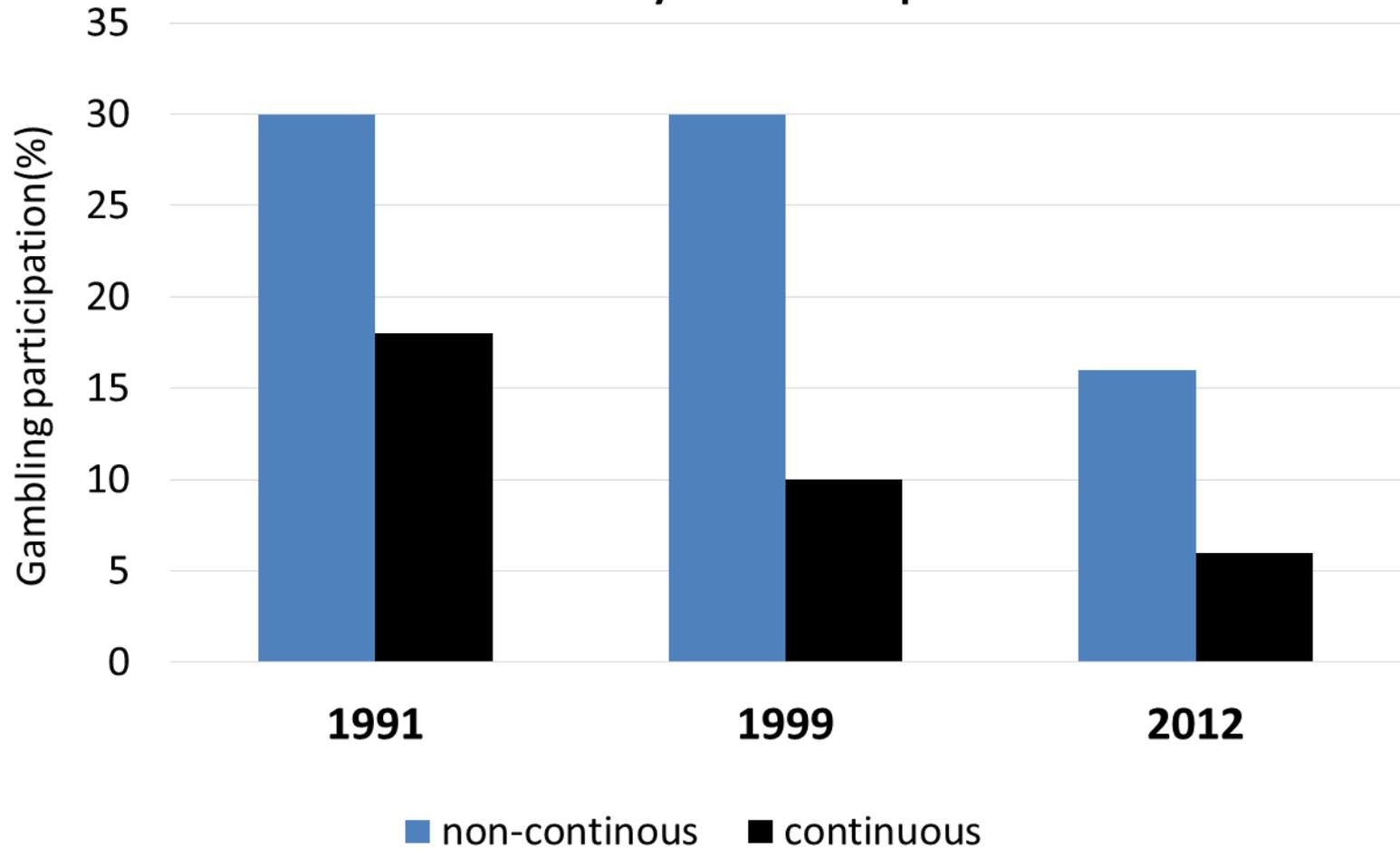
- Prior to the 2012-2015 survey, DIA national participation and attitude surveys in 1985, 1990, 1995, 2000, 2005 – past year participation increased from 85% to 90% (1985-1990), stayed around 90% during the 1990s, and reduced to 80% (2005-2015)
- Large national gambling/problem gambling studies in 1991, 1999 and 2012-2015 replicated DIA findings
- New forms of gambling introduced from 1987 - expenditure rose sharply from 1987-1990 then more gradually until 2003
- Since 2004, gambling expenditure stayed constant but dropped 20% when inflation-adjusted (primarily due to reduced EGM expenditure)
- EGM venues and numbers reduced since 2004 (2004 - 25,221; 2015 – 16,440)

- Past year and past week participation in almost all forms peaked during the few years after introduction and declined steadily thereafter
- Weekly Lotto participation fell from 42% to 17%, Instant Kiwi 13% to 3%, raffles 7% to 3%, non-casino EGMs 5% to 1%, track betting 4% to 1%
- From 2005 - 2012 past year and weekly participation continued to decrease for most more popular activities including non-casino EGMs
- From 1999 to 2012 reductions across almost all demographic groups, especially weekly participation (particularly large for 34 years and younger; exceptions – aged 65+, lacking formal qualifications, unemployed, Pacific Islanders, Asians)
- Participation in four or more activities 22% (2012) has decreased since 2005 (28%) and a high point of 40% during the 1990s

Past 12 months gambling participation by activity type (1985 – 2012)



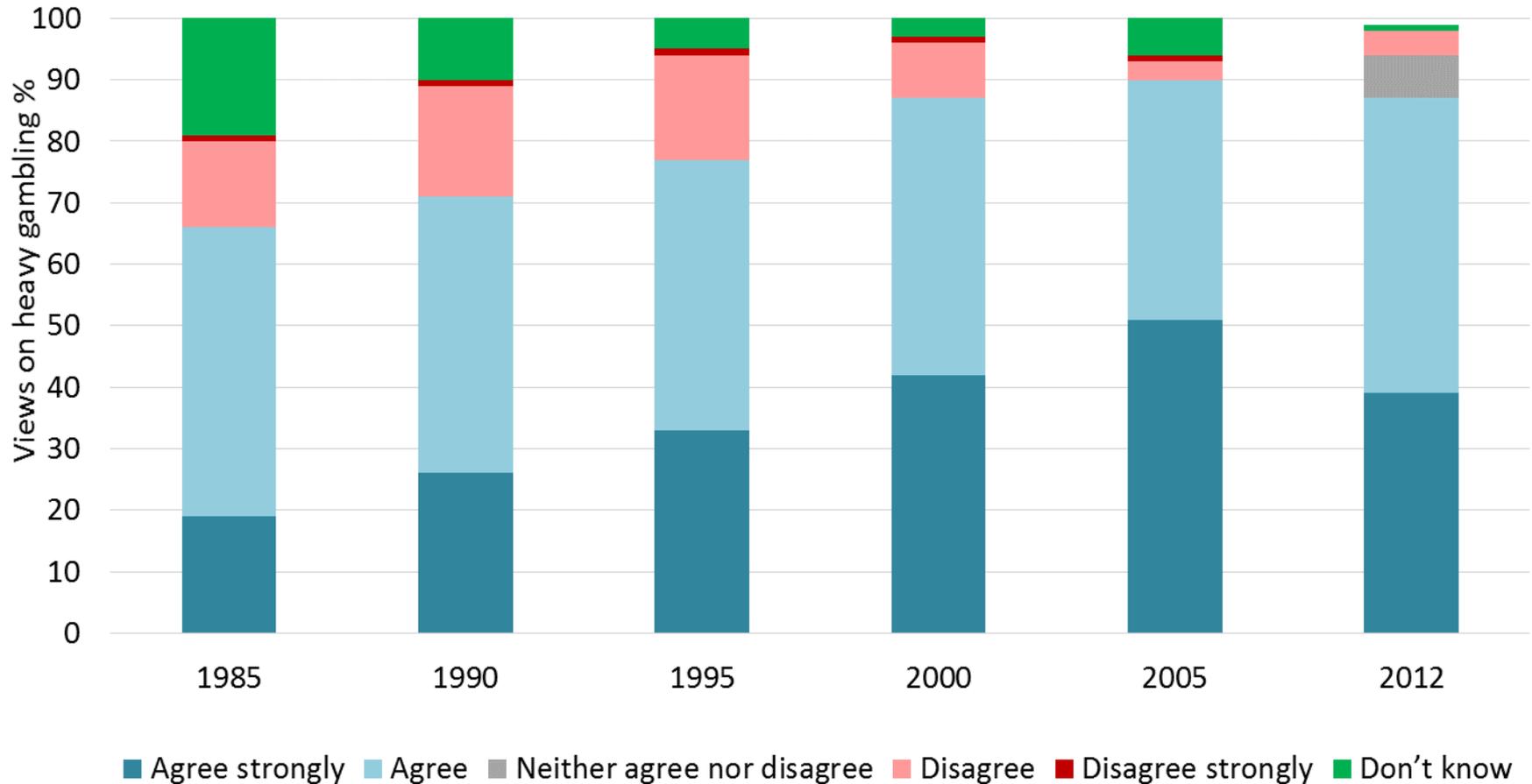
1991, 1999, 2012
Participation in continuous and non-continuous gambling activities on a weekly or more frequent basis



METHODS TO MODERATE GAMBLING

- A third used one or more methods (setting money limits most common, also separating gambling and other money, setting time limits, avoiding venues, leaving ATM and credit cards at home)
- More frequent for weekly continuous gamblers (46%) than weekly non-continuous (33%) and infrequent (26%)
- More frequent among higher spenders
- Large majority said effective

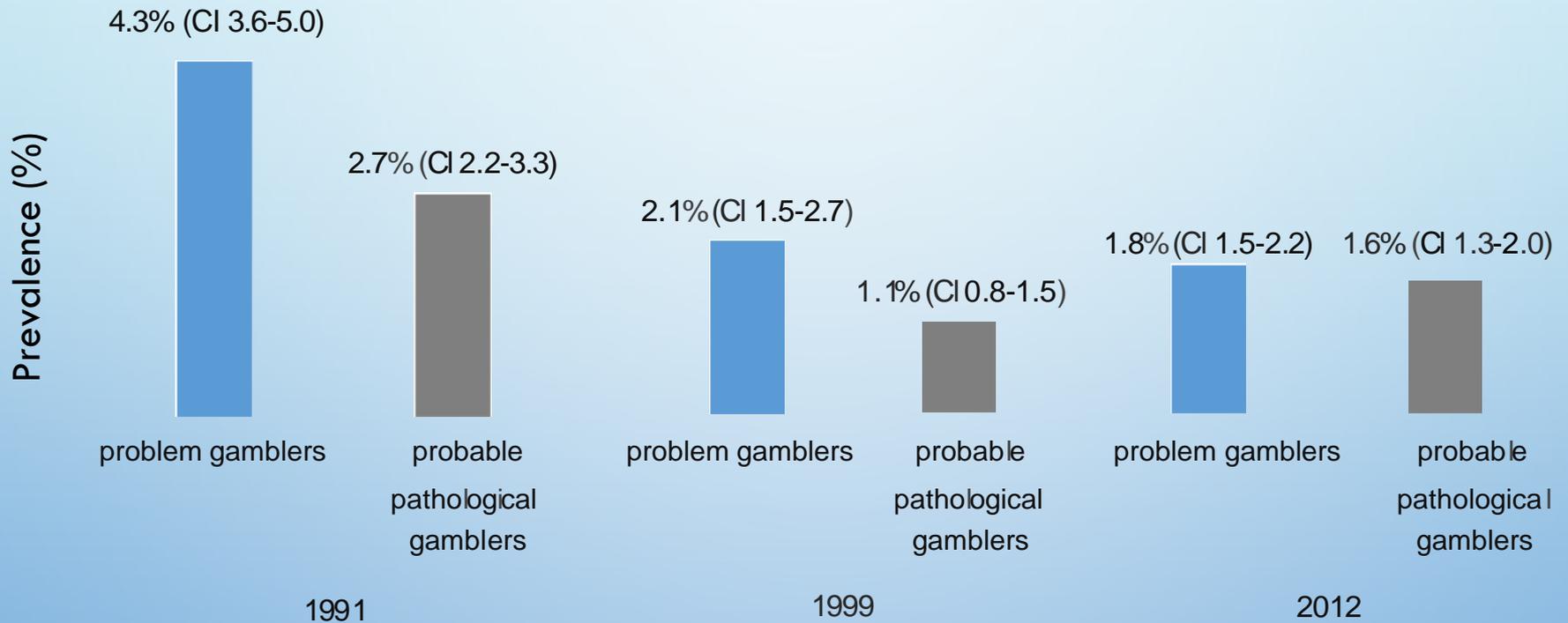
Degree of agreement that there is a growing problem with heavy involvement in gambling



CHANGE OVER TIME – PROBLEM GAMBLING

- Prevalence decreased significantly during the 1990s and since plateaued
- When adjusted for methodological differences no significant changes from 1999 to 2015 in lifetime probable pathological and problem gambling
- No significant changes in PG and MRG from 2006 to 2015 (2006/07 and 2011/12 NHS, 2010, 2012 and 2014 HSC/HPA and 2012 -2015 NGS)

Adjusted lifetime probable pathological and problem gambling prevalence



GAMBLING RISK FACTORS AND COMORBIDITIES

- Regular continuous gamblers (23% PG or MR), preferences for and monthly or more frequent participation in EGMs and a number of other continuous forms, participation in multiple activities and high expenditure
- A third of problem gamblers believe their spouse or partner has a problem relative to 2% non-problem, 4% LR and 12% MR
- As in previous studies PG (and MR and LR to varying degrees) had high rates of hazardous drinking, tobacco use, other drug use, self-rated poor health, psychological distress and low quality of life
- Problem gamblers much more often experienced major life events and experienced deprivations (e.g. forced to buy cheaper food, unemployment, income from benefits, put up with cold to save heating costs)

CONCLUSIONS / QUESTIONS

- Availability and adaptation processes occur simultaneously and differentially across population sectors
- Why have problems plateaued in some jurisdictions when participation has declined markedly?
- In some jurisdictions similar findings for alcohol
- How do we reduce harm further if reduced availability and/or participation do not lead to reduced harm?
- Is adaptation to particular forms of gambling protective when novel forms of gambling and/or delivery are introduced?

LINKS BETWEEN GAMBLING AVAILABILITY, PARTICIPATION AND HARM

Three phases:

1. Availability increased, participation increased, problem gambling/harm increased (availability and total consumption)
 2. Availability increased, participation decreased, problem gambling/harm decreased (adaptation and total consumption)
 3. Availability increased, participation decreased, problem gambling/harm plateaued (?)
- Past 10-15 years gambling participation declined markedly, including frequent participation in high-risk forms and involvement in multiple activities, yet harm has plateaued and increased in some population sectors
 - Not consistent with availability or adaptation hypotheses

WHAT IS GOING ON?

Many factors additional to gambling exposure and participation contribute to problem gambling/harm

- Marginalised/disadvantaged population sectors (ethnic minorities, young adults, low education, unemployed, residence in high deprivation neighbourhoods)
- Recent exposure to high risk gambling forms (youth, some recent migrants/ethnic minorities, non-Christian & non-traditional Christian)
- Close proximity to EGM venues and TABS

Recent prospective studies show most 'new' problem gamblers (half to two-thirds) are actually relapsing

PLATEAUIING MAY BE A CONSEQUENCE OF

- Changing population composition (e.g. higher proportions of at-risk groups)
- Increased social inequality and marginalisation
- Increased concentration of high risk/vulnerable groups in high deprivation/high gambling exposure neighbourhoods
- Accumulation of a pool of at-risk and problem gamblers who are being 'recycled'

Prevalence (stock of problems/harm) is determined by incidence (inflow) and outflow (recovery, remission, migration, death)

- Incidence consists of new cases and relapses
- Primary prevention to reduce incidence generally the optimal approach to reduce prevalence/harm but prevalence can remain stable or increase when incidence falls (e.g. stroke and some other NCDs)

CURRENT PROSPECTIVE GENERAL POPULATION STUDIES WILL INCREASE UNDERSTANDING BY

- Assessing rates of first onset (incidence), problem chronicity and relapse
- Identifying risk and protective factors for these transitions

SAMPLE SIZE

Wave 1 (2012)
N=6,251

Attempted 12-month
follow-up (2013)
n=5,266

No 12-month follow-up
attempt (2013)
n=985

Wave 2
participated
n=3,745

Wave 2 did not
participate
n=1,521

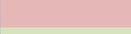
Response rates

Wave 1: 64%

Wave 2: 74%

TRANSITIONS FROM WAVE 1 TO WAVE 2

Wave 1	Wave 2										Total
	Non-gambler		Non-problem gambler		Low-risk gambler		Moderate-risk gambler		Problem gambler		
	n	%	n	%	n	%	n	%	n	%	
Non-gambler	485	64.7	247	33.0	16	2.1	1	0.1	<1	0.1	748
Non-problem gambler	327	11.9	2267	82.5	133	4.8	19	0.7	3	0.1	2749
Low-risk gambler	13	7.2	97	54.6	46	25.7	21	11.7	1	0.8	178
Moderate-risk gambler	4	6.9	16	30.7	14	25.3	15	27.5	5	9.6	53
Problem gambler	0	0.0	6	32.6	2	13.6	2	9.7	7	44.1	17
<i>Total</i>	828	22.1	2633	70.3	210	5.6	57	1.5	18	0.5	3746

 No change
 Transition to a higher risk level
 Transition to a lower risk level

RISK FACTORS FOR TRANSITION

Non-problem/low-risk gambler to moderate-risk/problem gambler

Gambling related

- No. & variety of activities
- Regular continuous gambling
- High monthly spend
- Frequent & long EGM play

Demographic

- Māori, Pacific, Asian
- Migrant
- Household income \$40,001 - \$60,000

Health

- Psychological distress

Protective factor: Gambling with other people

RISK FACTORS FOR REMAINING

Moderate-risk/problem gambler

Gambling related

- Regular continuous gambling
- Weekly gambling
- 31-60 mins playing clubs EGMs/day

Demographic

- Aged 55+ years

Health/QoL

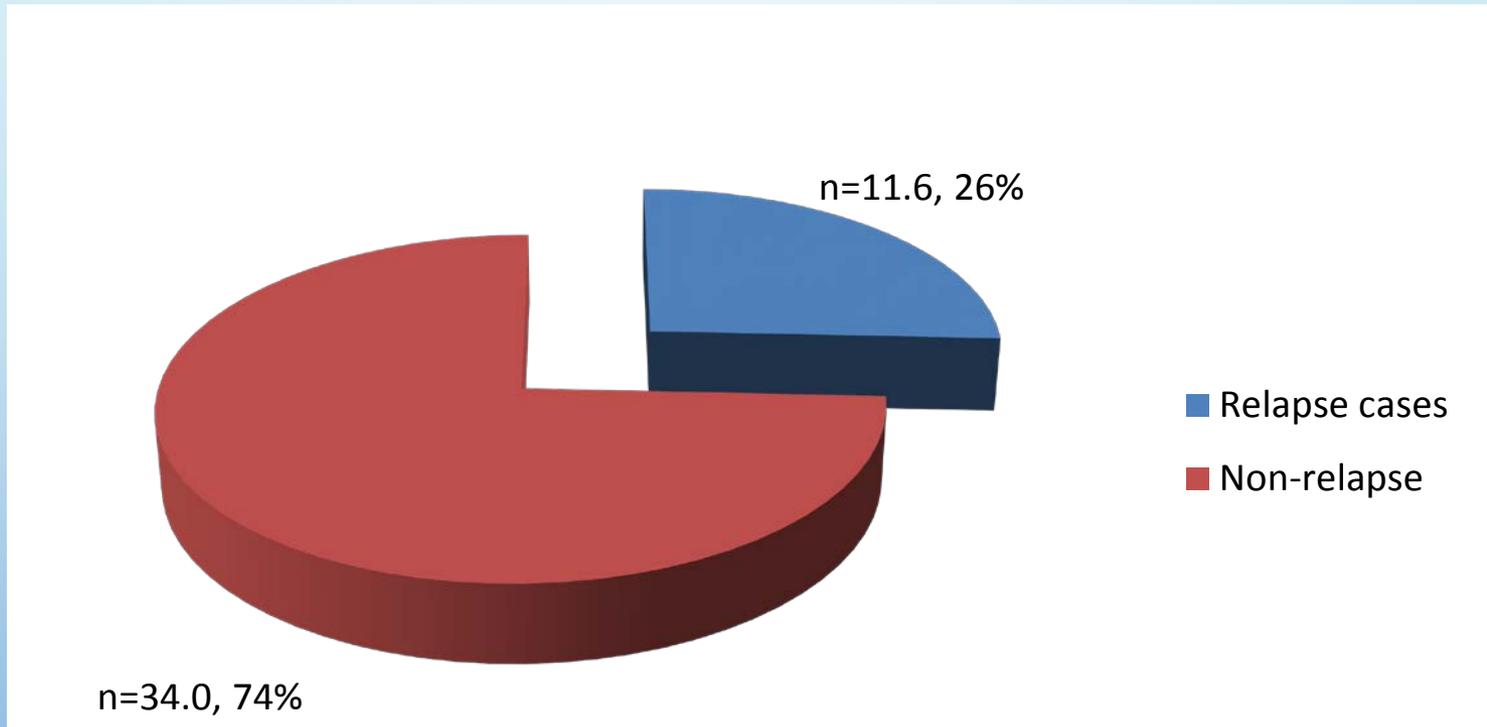
- Psychological distress
- Low quality of life
- Drug use
- Daily smoking

Protective factor: Migrant, leaving ATM and credit cards at home

INCIDENCE AND PREVALENCE

- 10 PARTICIPANTS BECAME PROBLEM GAMBLERS BETWEEN WAVE 1 AND WAVE 2
- INCIDENCE OF 0.28% (CI 0.10 - 0.45)
- NATIONALLY, ABOUT 8,046 PEOPLE (CI 2,874 - 12,931)
- 0.5% PROBLEM GAMBLING PREVALENCE

RELAPSE TO MODERATE-RISK/PROBLEM GAMBLING



26% of 'new' moderate-risk/problem gamblers had RELAPSED from past problematic gambling

48% of 'new' problem gamblers had RELAPSED from past problematic gambling

CAN EGMS BE OPERATED AND REGULATED IN LESS HARMFUL WAYS?

SUPPLY REDUCTION (FOCUS ON THE AGENT – REDUCING AVAILABILITY/ACCESSIBILITY)

- Reduce venue and EGM numbers – generally and/or selectively
- Reduce access hours
- Access restrictions, e.g. age, non-residents, card holders +
- Exclusion – self, venue +

DEMAND REDUCTION

- Prohibit smoking +
- Prohibit or reduce alcohol use
- Restrict access to money – credit, ATMs +
- Modify venue design
- Restrict advertising, promotions, sponsorship
- Information/awareness campaigns
- Education regarding gambling and gambling harm
- Change attitudes
- Change cognitions
- Venue staff training and host responsibility programmes
- On-site information/counselling centres
- Helplines and online and face-to-face interventions for problem gamblers and significant others +

REDUCE POTENCY (DEFANG)

- Modify EGM parameters – speed of play, prohibit early big wins, reduce betting lines, reduce near misses, mandatory cash-outs, bet size...
- Enforced breaks in play
- Enforced breaks with RG messages
- Static and dynamic messaging (pop-ups)
- Informative messaging
- Self-appraisal messaging
- Monetary and time-based pop-up messaging
- Normative feedback and enhanced messaging
- Limit-setting – money/time (pre-commitment) (voluntary?)
- Behavioural tracking tools
- Prohibition and modification of note acceptors

SUMMARY

- Many initiatives – relatively little known about effectiveness
- Some could have unintended consequences
- Those most often employed – e.g. information campaigns, self-exclusion, EGM responsible gambling features – less effective
- Many things probably help, a little, and there may be synergies – if sustained

BUT

- Can EGMs be defanged – or is that part of the attraction?
- Can harm be reduced without substantial revenue decline?
- When industry spokespeople say “problem gamblers are bad for our business” do they mean it?
- Does industry or government want a reduction in harm if it involves substantial revenue reduction?
- Is ‘responsible’ gambling and responsible gambling research for real – or an ideological cover to sustain the status quo?

A number of jurisdictions have or are planning to introduce compulsory, full EGM pre-commitment, e.g. Norway, Sweden, Victoria

Norway

- Removal of all EGMs in 2007 and replacement from 2009
- EGM numbers reduced from over 20,000 to 2,750
- Mandatory maximum monetary limits – daily, monthly
- Can set lower limits and include time limits
- Also mandatory breaks in play, self-exclusion, controls on bet size, game duration and maximum win
- All EGMs connected to a central server
- Customer access via personal card
- Very small numbers (2%-3%) set personal limits

- Helpline calls fell from 2,100 in 2005 to 657 in 2008 – and no rebound post 2009 (746 calls in 2011)
- From 2005 – 2011 both gambling revenue and participation dropped by approximately 80%
- Prevalence studies 2005-2010 – problem gambling prevalence steady at around 2%; moderate-risk fallen from 4% to 2%

Sweden

- Introducing compulsory pre-commitment with consumer-selected limits on higher risk EGMs, but can engage outside the system on lower risk forms