What is the impact of gambling availability on gambling problems?

David Hodgins
AGRI, 2006
What is the impact of gambling availability on gambling problems?

Three models
- Linear
Saturation Model

![Graph showing the relationship between gambling availability and problems.

- X-axis: Gambling availability (none, some, a lot, many, tons)
- Y-axis: Problems

The graph illustrates an increasing trend in problems as gambling availability increases, reaching a plateau at the "tons" level.]
Social Adaptation Model (Shaffer)
Challenges to testing the models

• Operationalizing Terms

• Confounding Factors
Operationalizing Terms

Different ways of conceptualizing Gambling
Availability /accessibility /exposure

1. **Dichotomous (yes/no)**
   - Lester (1994) US states with and without casinos – # of GA groups
   - E.g., before and after opening a casino

2. **Number of different available types of gambling**
   - Volberg (1994) – cross sectional comparison of states
Conceptualizing Gambling Availability /accessibility /exposure (cont)

1. Dichotomous (yes/no)
2. Number of different available types of gambling
3. Shaffer’s proposed Regional Index of Gambling Exposure
   - Uses environmental exposure to chemical toxins as model (Shaffer et al., 2004)
   - Three summed components
     - Dose (D)– quantity of gambling
     - Potency (P)– number of types of gambling
     - Duration (T) – years of exposure
RIGE = D + P + T

- **Dose (D)** – quantity of gambling
  - # of gambling establishments
  - # of people employed in casinos and casino hotels
- **Potency (P)** – number of types of gambling
  - # of legal forms of gambling available (of 6)
- **Duration (T)** – years of exposure
  - Years of legalized gambling in state
RIGE and Gambling Problems - Nevada (adapted from Shaffer et al., 2004)

\[ \text{Rho} = .81 \]
Problems with RIGE

- Equal weighting of factors
- Inclusion of # of employees?
  - Alberta <5%
  - Self-selection vs simply exposure (lead)
  - Does not correlate with # of establishments
- More validation research
  - Other factors – regional contiguity, advertising, internet, illegal gambling.
  - Individual level measure?
- Step in the right direction
Conceptualizing Gambling Availability /accessibility /exposure (cont)

1. Dichotomous (yes/no)
2. Number of different available types of gambling
3. Shaffer’s Regional Index of Gambling Exposure

4. Geographic distance
   - individual vs regional level level
     ■ NORC US National Survey
     ■ 50 miles from a casino
     ■ Welte (2004). Geo-coding based upon the individuals’ address and 9 types of gambling.
Pathological/problem gambler by casino within 10 miles.

Percent Pathological or Problem Gambler

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
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<tbody>
<tr>
<td>unweighted</td>
<td>N=2343</td>
<td>N=287</td>
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Challenges to testing the models

1. Operationalizing Terms
   - Gambling Availability
   - Gambling Problems
     - Disorders
     - Related Harms
     - Suicide

2. Confounding Factors
   - Welte’s comment
Basic Model

Gambling Availability → Gambling Problems
Gambling Availability → Gambling Behaviour → Gambling Problems
Lessons from Alcohol Literature

Alcohol Availability → Drinking Behaviour → Alcohol Problems

Indicators
- Injuries
- Cirrhosis
- Dependence
Evidence

- Single Distribution Theory (Rose, 1985)
- Population average predicts problems
  - BMI predicts obesity
  - Blood pressure predicts hypertension
- Strong consistent support
  - Injuries, cirrhosis
  - Alcohol dependence
Alcohol consumption and accident mortality in Canada (Skog, 2003)
WHO, 2004 Global Status Report on Alcohol

- Alcohol consumption per capita
- % Alcohol Dependent
Rho = 0.44

Percentage - Alcohol dependence among adult population

Total Recorded Alcohol per capita consumption (15+), in litres of pure alcohol
- **Strong support**
  - Increase and decrease in availability
    - Price
    - Drinking age
    - # of outlets (mixed)
Example – Xie et al., 2000

- Canada 1968-1986
  - Alcohol Availability
  - Drinking Behaviour
  - Alcohol Problems

- Lowering drinking age
- Increasing outlets
- Increased consumption
- Increased Cirrhosis mortality
Mann et al., 2005 (Ontario AA membership 1968-1989)
Conclusion

- An increase of one AA member per 100,000 decreases cirrhosis mortality by 0.6% in women and between 0.3 and 0.7% in men.
Gambling Availability → Gambling Behaviour → Gambling Problems → Treatment Seeking

Vulnerability Factors
- Age
- SES
- Comorbidities
- Ethnic group
- ...

Treatment Availability
Rush et al., (2005)

- OPGRC report
- Combined data on prevalence of gambling problem (CCHS), location of slots, racing and casinos, location and use of treatment in Ontario
Gambling Availability

Gambling Behaviour

Gambling Problems

Treatment Seeking

Vulnerability Factors
- Younger Age
- Divorced
- Substance abuse
- Male
- Less Education
- Employed
- Poorer health

Rush et al., 2005
Vulnerability Factors
- Age
- SES
- Comorbidities
- Ethnic group
Other Research

- Longitudinal studies
- Case reports –
  - South Dakota 1996 – removal of VLTS – decrease in GA groups
Other Research

  - RDD survey 1993-94 (N=10000), and 1994-95 (N=10000)
  - Increase in gambling expenditure (doubled) and in excessive gambling (>10% of household $, four times higher)
Other Research

- UK Studies – National Lottery 1994 (Shepherd et al., 1998)
  - Resident mail questionnaire Oct-94, May-95 and Nov-95 (N=206, 38%)
  - Increase in gambling DSM symptoms; (17% increase in calls to GA)
Canadian Studies – opening casinos

- Windsor (Govoni et al., 1999)
- RDD survey (SOGS) 1993 (N=1682), 1995 (N=2581), 1997 (N=2714)
- Increase in number gambling after 4 years, but not number of problem gamblers
Canadian Studies – casinos

- Niagara (Room et al., 1999)
  - RDD 1996 Niagara Falls residents (N=677) and followed for 1 year (69%) plus other databases
  - short SOGS
  - Increase in gambling, increase in problems, increase in knowing someone with problem
Gatineau (Jacques et al., 2000)

- 1996 RDD in Gatineau (N= 810) and Quebec City (control, N=798) followed for one year (79% and 73%)

- SOGS

- Increase in gambling, increase in problem but not pathological gambling, increase in knowing someone with problem
Summary of Longitudinal Research

- All short term follow-ups
- Future studies?
Gambling Availability

Gambling Behaviour

Gambling Problems

Treatment Availability

Treatment Seeking

Laws

Attitudes

Vulnerability Factors
- Age
- SES
- Comorbidities
- Ethnic group
It is better to know some of the questions than all of the answers

James Thurber