2019-03

Alberta Gambling Research Institute Conference 2019: Blurred Lines in Gambling Research

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Alberta Gambling Research Institute

http://hdl.handle.net/1880/110151
conference proceedings

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HARM IS A UNIDIMENSIONAL CONSTRUCT

PART I - Measuring harm

Part II – Population impact

Assoc. Prof. Matthew Browne

AGRI March 2019
PART I - MEASURING HARM
adverse consequences due to an engagement with gambling that leads to a decrement to health or wellbeing

Assessed by our group in multiple studies
Very diverse
Ranging in severity

Gambling-related Harm

Specific harms
- Financial
  - credit card debt
  - reduction savings
  - loss of utilities
  - bankruptcy
- Relationships
  - neglect
  - conflict
  - less socialising
  - separation
- Psych. / Emotional
  - distress
  - shame
  - worthlessness
  - regret
- Health
  - physical activity
  - loss of sleep
  - living conditions
  - lack of hygiene / self-care
- Work / Study
  - late / absent
  - conflict
  - reduced perf.
- Anti-social
  - neglect children
  - theft/criminality
  - violence

Gambling Problems

* Relative to capacity to support
ARE HARMs MULTIDIMENSIONAL?

NO

- Alpha .97
- Omega .87

So, harms reflect a single latent factor that should predict a drop in wellbeing.
DO HARMS PREDICT A DROP IN WELLBEING? (1)

**YES**

- Collate harms reported by gamblers
- Create vignettes describing symptoms
- Elicit the disability weight

So, PGSI categories associated with

(a) increasing # harms reported
(b) increasing DW
DO HARMS PREDICT A DROP IN WELLBEING? (2)

YES

- Self-reported QoL drops reliably with # reported harms
- # reported harms correlates very highly (~.93) with latent factor

So, # of reported harms (/72) is reliably associated with decreases in wellbeing.
But 72 is too many!
WHICH HARMS SHOULD WE SCREEN FOR?

• Think dimensionally not categorically
  o wellbeing
  o degree of harm

• Very severe harms tend to be poor indicators:
  o bankruptcy
  o divorce

• Financial and psychological impact occurs most reliably
  o Relationship & health harms (e.g.) often ‘2\textsuperscript{nd} order’ a domino effect

• Can we infer severe harm from the occurrence of multiple mild-moderate harms?
THE SHORT GAMBLING HARMs SCALE

Table 2 Progressive properties of the 1–10 selected harm probes with respect to the full checklist

<table>
<thead>
<tr>
<th>Category</th>
<th>Item</th>
<th>PR (%)</th>
<th>FN (%)</th>
<th>STC (r)</th>
<th>ITC (r)</th>
<th>IRT</th>
<th>Dffclt</th>
<th>Dscrmn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>1. Reduction of my available spending money *</td>
<td>22.3</td>
<td>24.0</td>
<td>.613</td>
<td>.613</td>
<td>1.10</td>
<td>2.12</td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td>2. Reduction of my savings *</td>
<td>18.0</td>
<td>17.1</td>
<td>.737</td>
<td>.598</td>
<td>1.12</td>
<td>2.68</td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td>3. Less spending on recreational expenses such as eating out,</td>
<td>15.0</td>
<td>13.3</td>
<td>.794</td>
<td>.530</td>
<td>1.14</td>
<td>1.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>going to movies or other entertainment. *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emo/Psy</td>
<td>4. Had regrets that made me feel sorry about my gambling</td>
<td>11.8</td>
<td>10.8</td>
<td>.828</td>
<td>.478</td>
<td>1.45</td>
<td>1.82</td>
<td></td>
</tr>
<tr>
<td>Emo/Psy</td>
<td>5. Felt ashamed of my gambling</td>
<td>13.2</td>
<td>8.7</td>
<td>.862</td>
<td>.532</td>
<td>1.40</td>
<td>2.45</td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td>6. Sold personal items</td>
<td>6.4</td>
<td>7.5</td>
<td>.887</td>
<td>.383</td>
<td>1.61</td>
<td>1.96</td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td>7. Increased credit card debt</td>
<td>9.3</td>
<td>6.6</td>
<td>.905</td>
<td>.450</td>
<td>1.64</td>
<td>1.69</td>
<td></td>
</tr>
<tr>
<td>Relationships</td>
<td>8. Spent less time with people I care about</td>
<td>10.5</td>
<td>5.8</td>
<td>.917</td>
<td>.497</td>
<td>1.77</td>
<td>2.04</td>
<td></td>
</tr>
<tr>
<td>Emo/Psy</td>
<td>9. Felt distressed about my gambling</td>
<td>10.3</td>
<td>5.3</td>
<td>.924</td>
<td>.495</td>
<td>1.56</td>
<td>2.53</td>
<td></td>
</tr>
<tr>
<td>Emo/Psy</td>
<td>10. Felt like a failure</td>
<td>10.2</td>
<td>4.8</td>
<td>.935</td>
<td>.511</td>
<td>1.57</td>
<td>2.65</td>
<td></td>
</tr>
</tbody>
</table>

**PR** percent positive responses, **FN** false negatives (incremental), **STC** subscale to 72-item total correlation (Spearman), **ITC** item 72-item total correlation

But is it really measuring harm?
PROPERTIES OF THE SGHS

- 0.94 correlation with full checklist
- Better predictor of wellbeing than PGSI, addiction, or consumption
- Omega 0.83
  - Unidimensional, reliable
- Item response theoretic
  - All items have high discrimination of latent factor
  - Vary in severity, up to moderately severe (selling personal items)
- Fully mediates relationship between dependence and wellbeing

N=1500 regular gamblers
ARE LESS SEVERE FINANCIAL HARMS ‘TRIVIAL’ OR ‘OPPORTUNITY COSTS’?

NO

Comparing self-reported wellbeing

<table>
<thead>
<tr>
<th>Endorsed?</th>
<th>Well-being decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

| Reduction of my available spending money | 62 | 54 | -8 |
| Reduction of my savings                  | 62 | 54 | -8 |
| Less spending on recreational expenses…  | 62 | 53 | -9 |

8 points is a huge differential: comparable to the effect of an extra $100k in household income
LESS SEVERE FINANCIAL HARMs ARE STRONGLY INDICATIVE OF MORE SEVERE ISSUES

<table>
<thead>
<tr>
<th></th>
<th># 3 ‘mild’ harms endorsed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Relationship conflict</td>
<td>.01</td>
</tr>
<tr>
<td>Feelings of hopelessness</td>
<td>.01</td>
</tr>
<tr>
<td>Unable to afford essential expenses</td>
<td>.00</td>
</tr>
<tr>
<td>Feelings of extreme distress</td>
<td>.02</td>
</tr>
<tr>
<td>Reduced performance at study or work</td>
<td>.01</td>
</tr>
<tr>
<td>Reduced sleep due to worry about gambling</td>
<td>.02</td>
</tr>
<tr>
<td>AVERAGE SELF-RATED WELLBEING</td>
<td>63.2</td>
</tr>
</tbody>
</table>

Same pattern for all severe harms.
WOULD WE BE BETTER OFF PROBING MORE SEVERE HARMS?

NO

Explaining variation in wellbeing:
• 3 least severe harms in SGHS: 6.5%
• 3 most severe harms in SGHS: 5.1%
• Typical 3 severe harms *not* in SGHS 3.1%
  o (e.g. loss of job, theft, end of relationship)

Combination (sum) of more prevalent harms is most efficient at capturing the underlying dimension
PART II – POPULATION IMPACT
THE THEORY (BASIC BOD)

• Quantify impact per person, e.g.
  o Disability weight, elicited via TTO, VAS, etc
  o Decrement to wellbeing assoc. with gambling
  o Counting harms per-person
    o (crude, but simple)
    o Take into account severity

• Aggregate (sum) over people
  o Compare different segments of the population

\[ YLD_1 = \text{Adult Population} \times \text{Annual Prevalence for Health State (\%)} \times \text{Utility Weight of Health State} \]
BOD: THE RESULTS THAT CAUSED ALL THE FUSS

- Per-person DW established using BoD methods
  - One community sample described the harms they experienced
  - Another community sample rated QoL impact of those descriptions
  - Simple aggregation from known PGSI prevalence
  - No reference to SGHS
  - No assumptions about a ‘threshold’ for harm
- Problem gamblers harmed significantly more per-person
- But the other categories are far more prevalent

Victoria, Australia

Low-Risk 50.2%
Moderate-Risk 24.1%
Problem Gamblers 15.2%

New Zealand

Low Risk Gambling 48.0%
Moderate Risk Gambling 33.6%
Problem Gambling 18.4%

Figure 15. Proportion of harm in New Zealand population by PGSI risk category

Proportion of harm in Victorian population by PGSI risk category
ARE THESE RESULTS SO SURPRISING?

![Graph showing the relationship between impact on quality of life and gambling consumption relative to capacity. The graph illustrates the transition from Rational consumption to Harmful gambling, with a focus on Sub-clinical harmful gambling. The graph highlights the balance between Harms and Benefits at different levels of gambling consumption.]

- **Harms** and **Benefits** are represented by red and green lines, respectively.
- The x-axis represents Gambling consumption relative to capacity (proportion of gambling population), and the y-axis represents Impact on quality of life.
- The graph illustrates the transition from Rational consumption to Harmful gambling, with a focus on Sub-clinical harmful gambling.
- The graph highlights the balance between Harms and Benefits at different levels of gambling consumption.
PUSH-BACK!

• Let’s be frank: influential & established groups have a problem with this result
  o Pathological / Reno model
  o Industry and regulators
• Criticisms in journals and conferences
• NO contra-indicative data presented

…but we’ve been collecting and analyzing more data
THE PREVENTION PARADOX:
MOST HARM REPORTED BY LARGER, LOWER RISK POPS

Financial

- Needed assistance from welfare organizations (foodbanks or emergency assistance)
- Took on additional employment
- Less spending on essential expenses such as medications, healthcare and food
- Less spending on beneficial expenses such as insurances, education
- Sold personal items
- Late payments on bills (e.g. utilities, rates)
- Increased credit card debt

PGSI Category: RG LR MR PG
CHECKING THE YLD RESULTS WITH QOL

• BOD Too subjective?
  o Over-attribution?
  o Stigma?

• Personally-reported QoL for gambler risk categories
  o Very simple to do
  o No attribution required!
A VERY SIMPLE CALCULATION

Table 5. Population-normed PWI impact by PGSI Risk Category.

<table>
<thead>
<tr>
<th>Gambling Risk Category (PGSI)</th>
<th>LR gamblers</th>
<th>MR gamblers</th>
<th>PG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean PWI score</td>
<td>67.70</td>
<td>60.81</td>
<td>56.70</td>
</tr>
<tr>
<td>Mean difference</td>
<td>4.15</td>
<td>11.04</td>
<td>15.15</td>
</tr>
<tr>
<td>Population percentage (%)</td>
<td>8.91</td>
<td>2.79</td>
<td>.81</td>
</tr>
<tr>
<td>PWI delta per 100 persons</td>
<td>-36.98</td>
<td>-30.80</td>
<td>-12.27</td>
</tr>
<tr>
<td>Relative contribution (%)</td>
<td>46.20</td>
<td>38.48</td>
<td>15.33</td>
</tr>
</tbody>
</table>

* MS in review

- Different data
- Different method
CONCLUSIONS

• Measuring harm
  o Harms symptomology best indicator of QoL decrement (harm)
  o Symptomology complex, but unidimensional
  o Dimensional not categorical thinking
  o Portraying financial harms as ‘opportunity costs’ is fake-news
  o Indicated efficiently by presence of multiple symptoms

• Population impact
  o Three separate lines of evidence show >> 50% harm accruing to non-problem gamblers
  o No contra-indicative data, but lots of pushback
    o Naive to ignore the political landscape
FUTURE DIRECTIONS

- Attributable fraction
- Benefits of gambling
- Legacy impacts
- Harms to others, especially family