Towards Alcohol Harm Reduction and Housing Stability: Preliminary Findings of Thunder Bay Managed Alcohol Program

Research Team

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In Collaboration with Patty Hajdu, Shelter House,
Rates of Alcohol Dependence in Homeless Populations

• Among homeless male populations, prevalence of severe alcohol dependence is estimated to be 30-40%
• In the general public it is only 3-4%
• No studies of prevalence among women experiencing homelessness.
Types of Alcohol Related Harms

**Acute**
- Injuries
- Poisoning
- Acute illness
- Freezing

**Chronic**
- Liver disease
- Cancers
- Strokes
- Other diseases
- Dependence
- Mental health

**Social**
- Problems with: Housing
- Finances
- Relationships
- Law
- Workplace

INTOXICATION

LONG TERM

HIGH VOLUME

DRINKING CONTEXT
Current Evidence for MAPs

Three programs (Ottawa, Toronto, Vancouver) have evaluations (Podymow et al. 2006, Svoboda 2006, Stockwell et al., 2013)

These studies suggest MAPs can

• improve health
• improve quality of life
• reduce police and emergency health service contacts
• reduce the harms of drinking
• but some questions re impact on chronic harms
Next: National Study of MAPs

- 5 MAP Sites
- 3 year project (2013-2016)
• Participatory Research Process:
  – Academic researchers and KU’s collaborate through the process of the research.

• Mixed Methods Expansion Study
  – Longitudinal follow up of 220 MAP participants and 250 controls to examine outcomes overall & by site
  – Case study approach to understand processes of implementation and impact of context on outcomes
CARBC Evaluation

To evaluate the implementation of Thunder Bay MAP as part of a National Study on MAP’s

• Do MAPs contribute to:
  – Improvements in health and well-being including reduced harms of alcohol use?
  – Reductions in hospital, police and ED use
  – Less hazardous patterns of alcohol use

• Inform Program and Policy recommendations for the development of MAP’s
Kwae Kii Win Eligibility Criteria

- Severe and chronic alcohol use problems
- Non-responsive to abstinence programs
- Public intoxication and police contacts
- Living outside or in emergency shelters
- Adults
- Open to men and women
Evaluation Measures

- Housing Satisfaction and Quality
- Mental Health and Well-Being
- Physical Health
- Alcohol Related Harms/Severity of Alcohol Dependence
- Access to Health Care
- Police Contacts
- Hospital and ED Visits
- Non-Beverage Alcohol Use
- Overall Alcohol Consumption
Study Design – Sources of Data

**Interviews**
- Surveys with MAP & controls (Baseline/6 months)
- Brief Monthly Follow-ups with MAP and controls
- Qualitative Interviews with MAP staff and participants

**MAP Records**
- Alcohol administration records
- Housing records
- Liver function tests
- MAP policies

**Other Records**
- Emergency Department records
- Hospital records
- Coronial records (Ontario)
- Police records
## Participants

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Follow-up</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAP</strong></td>
<td>18</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>- 7 female, 11 male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- All had Aboriginal backgrounds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Average age: 42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- (5 by 6 months)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>20</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>- 8 female, 12 male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- All had Aboriginal backgrounds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Average age: 37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>-</td>
<td>-</td>
<td>4</td>
</tr>
</tbody>
</table>
But this program ... has given me hope and has allowed me to really think what I wanna do with the rest of my life. And because I was stuck, not stuck, I was I guess you could say rock bottom, you know going home couldn’t get me out of that rock bottom that I was in. But since coming here it’s kinda given me, like I don’t know the word I should use, like I know there’s a horizon waiting for me.

MAP Participant
There are really only two goals of the program: to lessen the load on the community services, and to provide a better quality of life. And so if they still drink hand sanitizer, but their quality of life is better, because now they can go to bed and sleep it off in a safe place, it’s still progress.

MAP Staff
Housing

14 out of 18 MAP participants retained housing. At follow-up, controls remained homeless.

Housing contributed to feelings of safety and reduced harms:

“You feel safe, you feel like you’ve got a warm place to stay, and some home. You’re not outside sleeping and wondering what to eat next.”
Housing

Fig. 1

Housing quality and satisfaction at baseline

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Control (n=17)</th>
<th>Map (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay*</td>
<td>3.3</td>
<td>4.4</td>
</tr>
<tr>
<td>Affordability</td>
<td>4.34</td>
<td>4.4</td>
</tr>
<tr>
<td>Safety*</td>
<td>4.4</td>
<td>4.2</td>
</tr>
<tr>
<td>Spaciousness*</td>
<td>4.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Privacy*</td>
<td>3.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Friendliness</td>
<td>3.8</td>
<td>3.6</td>
</tr>
<tr>
<td>Overall quality*</td>
<td>3.8</td>
<td>4.0</td>
</tr>
</tbody>
</table>

* Indicates statistically significant difference between groups
Results – Mental Health and Well-Being

• Participants described:
  – Off the street and feeling safe
  – Being like ‘a big family’
  – Reconnecting with family or origin
  – Relearning skills of having a home
  – Improved communication and relational skills
  – Self-care
  – Money Management
  – Improved Self-esteem/Self-worth
Mental Health and Well-Being

Fig. 2

WHO-BREF domains at baseline

<table>
<thead>
<tr>
<th>Domain</th>
<th>Control (n=20)</th>
<th>MAP (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Health</td>
<td>12.3</td>
<td>13.3</td>
</tr>
<tr>
<td>Psychological</td>
<td>12.5</td>
<td>12.9</td>
</tr>
<tr>
<td>Relationships</td>
<td>13.5</td>
<td>15</td>
</tr>
<tr>
<td>Environment</td>
<td>11.1</td>
<td>14.4</td>
</tr>
</tbody>
</table>
Self care

“I’m starting to cook a lot more now, like I’ve been cooking healthy foods and trying to make sure to keep most of the people’s blood sugar on a normal level.”

MAP Participant
Liver Function Tests

• 10 out of 13 participants who had tests done showed signs of alcohol related liver damage at some point
• For those with comparable repeated tests, 7 out of 8 showed reductions in AST or remained normal after starting the MAP
• 8 out of 11 had reductions in ALT or remained normal after starting the MAP
• Lack of data for the controls.
Results – Alcohol Related Harms

Fig. 4

Harms experienced in the past month at baseline

- Social
- Physical
- Home Life
- Work
- Financial
- Legal
- Housing
- Learning
- Assaulted
- Seizure
- Pass Out

[Control] [MAP]
Results – Alcohol Related Harms

Harms experienced at 6-month follow-up

- Seizure
- Pass Out

Control

MAP
“She [Nurse Practitioner] also monitors the residents of the program, to see what kinds of health outcomes are resulting from their involvement, but then she can also do, you know, wound care, immunizations, prescribes lots of different kinds of medications, deal with chronic infections, help people with diabetes, and all kinds of stuff. It’s great.”
Results - Health Services

- MAP participants had significantly fewer hospital admissions (-37%) and detox admissions (-88%) than when not on MAP, and also when compared to controls.
- ER use 54% lower than controls, but not a statistically significant difference.
# Results - ED and Hospital Contacts

**Table 4.** Mean of the number of hospital admissions per 100 days during periods on and off the MAP and among controls, 2008-2013  
*p<0.05 one-tailed*

<table>
<thead>
<tr>
<th>Observation period/sample</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off MAP</td>
<td>13</td>
<td>0.38</td>
<td>0.66</td>
<td>0.00</td>
<td>2.37</td>
</tr>
<tr>
<td>On MAP</td>
<td>13</td>
<td>0.24*</td>
<td>0.22</td>
<td>0.00</td>
<td>0.60</td>
</tr>
<tr>
<td>Controls</td>
<td>10</td>
<td>0.42</td>
<td>0.57</td>
<td>0.00</td>
<td>1.76</td>
</tr>
</tbody>
</table>

**Table 5.** Mean of the number of ER presentations per 100 days during periods on or off the MAP and among controls, 2008-2013

<table>
<thead>
<tr>
<th>Observation period/sample</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off MAP</td>
<td>13</td>
<td>3.60</td>
<td>3.22</td>
<td>0.90</td>
<td>10.29</td>
</tr>
<tr>
<td>On MAP</td>
<td>13</td>
<td>3.82</td>
<td>2.84</td>
<td>0.29</td>
<td>9.42</td>
</tr>
<tr>
<td>Control</td>
<td>10</td>
<td>7.15</td>
<td>14.76</td>
<td>0.55</td>
<td>48.67</td>
</tr>
</tbody>
</table>
...I used to steal that mouthwash just to try and feel – get myself to feel better [...] I was in and out of jail. Ever since I’ve moved here, I haven’t even had any police contact.

MAP Participant
Results – Police

• MAP participants had fewer police contacts than when not on MAP (-42%) and compared to controls (-43%) but not statistically significant

• Significant reduction in the proportion of police contacts that led to being held in custody (-43%, p<0.0001)
Fig. 5

Police contacts for MAP participants on and off the MAP (n=13) and controls (n=12)

Controls (%)

- No custody time: 20.5%
- Custody time: 79.5%

On MAP (%)

- No custody time: 58.4%
- Custody time: 41.6%

Off MAP (%)

- No custody time: 25.6%
- Custody time: 74.4%
Results – Non-Beverage Alcohol

Fig. 6

Number of people reporting use of different types of non-beverage alcohol in past month at baseline

- Rubbing Alcohol (Control: 2, MAP: 1)
- Mouthwash (Control: 12, MAP: 8)
- Hand Sanitizer (Control: 5, MAP: 5)
- Cooking Wine (Control: 0, MAP: 1)
- Hair Spray (Control: 10, MAP: 8)
- Other (Control: 2, MAP: 0)

Control (n=14)  MAP (n=12)
I haven’t touched that stuff in a long time...when I first came into this program everything really changed and I’m happy about that.
Results – Overall Alcohol Consumption

MAP Participants
Average Drinking Amounts (March - September 2013)

Fig. 7

<table>
<thead>
<tr>
<th>Month</th>
<th>MAP</th>
<th>Non-MAP</th>
<th>Avg. Total Drinks</th>
</tr>
</thead>
<tbody>
<tr>
<td>March</td>
<td>7.23</td>
<td>2.98</td>
<td>4.66</td>
</tr>
<tr>
<td>April</td>
<td>8.11</td>
<td>2.81</td>
<td>5.47</td>
</tr>
<tr>
<td>May</td>
<td>7.94</td>
<td>2.58</td>
<td>4.74</td>
</tr>
<tr>
<td>June</td>
<td>6.47</td>
<td>2.37</td>
<td>4.40</td>
</tr>
<tr>
<td>July</td>
<td>6.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aug</td>
<td>6.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept</td>
<td>7.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard Drinks (17.05mL Ethanol)
Fig. 8

Average Number of Days Alcohol Used in Past Month

- **Baseline**
  - Control (n=6): 22.67
  - 4-6 month follow-ups: 16.17

- **MAP**
  - Baseline 4-6 month follow-ups: 25.67
  - 4-6 month follow-ups: 28.33
Conclusions

• Harm reduction goals are being met
• MAP participants experience improved health and quality of life
• Reduced hospital admissions and time in police custody for MAP participants indicates economic savings
• Participants are much safer in the program than on the street
• The program’s stability and safety has enabled many participants to reconnect with family
• Important to monitor physical health of participants
<table>
<thead>
<tr>
<th>Patterns of Risky Drinking</th>
<th>Heavy Episodic Drinking</th>
<th>Non-Beverage Alcohol (NBA) Consumption</th>
<th>Drinking in Unsafe Settings</th>
<th>High Volumes of Alcohol Consumed Over the Long-Term</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potential Harms</strong></td>
<td>Violence, Injuries, Poisoning, Seizures, Unstable Housing, Legal and Social Problems</td>
<td>Exacerbate chronic diseases, higher ethanol consumption, poisoning</td>
<td>Violence, Injuries, Freezing, Problems with Police, Intoxication from hurried Consumption</td>
<td>Liver cirrhosis, Cancers, other chronic diseases, Dependence, Housing and Social Problems Nutritional Deficiencies</td>
</tr>
<tr>
<td><strong>Potential MAP Benefits</strong></td>
<td>Smooth Drinking Pattern, Fewer Injuries &amp; Seizures, Secure Housing, Improved Relationships</td>
<td>Reduced consumption of NBA</td>
<td>Shelter from cold, protected supply of alcohol, personal safety, food</td>
<td>Housing Security, Reduced Consumption Improved nutrition</td>
</tr>
<tr>
<td><strong>Potential MAP Risks</strong></td>
<td>Higher BACs if non-MAP consumption continues</td>
<td>Increased ethanol consumption if MAP drinks are additive</td>
<td>Less exercise, unhealthy weight gain for some</td>
<td>Fewer abstinent days may increase liver disease risk</td>
</tr>
<tr>
<td><strong>Remedial Strategies</strong></td>
<td>1. Protocols to manage non-MAP drinking</td>
<td>1. Protocols for non-MAP drinking</td>
<td>1. Incorporate leisure and physical activities</td>
<td>1. Strict eligibility criteria</td>
</tr>
<tr>
<td></td>
<td>2. Ensure no increase in ethanol consumption</td>
<td>2. Nutrition advice</td>
<td>2. No increase in amount or frequency of use</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Medication to assist with regular days off</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Offer detox referrals</td>
<td></td>
</tr>
</tbody>
</table>

Balance of benefits versus risks need to be reviewed continually
Recommendations

- Maintain clear eligibility criteria focusing on acute harms & severity of dependence
- Monitor possible alcohol-related physical health harms as part of ongoing clinical care (e.g., liver function tests)
- Potential risks from continuous high-level alcohol consumption fully explained to participants
- Alcohol administration tailored so neither use frequency or amount increases
- Opportunities to attempt either short and longer term abstinence available on demand
- Protocols to manage non-MAP consumption
Acknowledgments

We would like to thank our research partners at Shelter House, particularly Patty Hajdu, ED for their contributions to this research.

We wish to thank all the participants, staff and management of the Kwae Kii Win MAP for being so generous with their time and for the opportunity to experience first-hand an extraordinary and brave enterprise in compassionate care.
Thank you!

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