Treatment Outcomes of a Tailored Smoking Cessation Programme for Individuals Accessing Addiction Treatment Services

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Treatment outcomes of a tailored smoking cessation programme for individuals accessing addiction treatment services

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Declaration of competing interests

Dr Milan Khara has received unrestricted research funding, speaker’s honoraria, consultation fees or product from the following organisations/companies in the previous 12 months:

- Health Canada
- Interior Health Authority
- Pfizer
- TEACH
- QuitNow Services
- Ottawa Heart Institute
- Johnson and Johnson
- Provincial Health Services Authority
- College of Physician’s and Surgeon’s of British Columbia

Dr Chizimuzo Okoli has received consultation fees from

- Vancouver Coastal Health Authority

in the previous 12 months.
Arguments for Not Providing Tobacco Treatment....

“these patients don’t want to quit”

• 80% of participants in a methadone maintenance program and 75% of participants in an alcohol abuse program endorsed a desire to quit (Richter KP et al., 2001; Ellingstad TP et al, 1999).
• In a review of 9 studies of motivation to quit smoking among individuals with psychiatric disorders at least 50% are contemplating cessation (Siru, Hulse & Tait, 2009).

“these patients will relapse (to other substances) if they try to quit”

• Smoking cessation efforts can ENHANCE rather than compromise long term sobriety (Prochaska JJ et al, 2004).

“these patients are unable to quit”

• Meta-analysis (n = 19 studies) of smoking cessation among individuals in addiction treatment and recovery found increased cessation at end of 12 weeks treatment (BUT NO SIGNIFICANT EFFECT AT 6 MONTHS!) (Prochaska JJ et al, 2004).
• Recent study found end-of-treatment smoking cessation rates of 20% among individuals with psychiatric disorders accessing outpatient tobacco treatment program—Longer duration of treatment significantly predicted successful cessation.
Program Description

- The Tobacco Dependence Clinic (TDC) is a program that provides *behavioural counselling* and up to *6-7 months of no-cost pharmacotherapy* for clients through VCH Addiction Services.

- Program is run with a team of nurses, counsellors, respiratory therapists, and a physician.

- Currently in 7 Addictions services located in community health centres in Vancouver.

**Eligibility:**
- 19 years or older
- Tobacco dependent
- Have a history of substance use disorder and/or mental illness
- Financially disadvantaged
8-week structured group

Phase 1: engagement in the process – weeks 1-2

Phase 2: planning for change – weeks 3-4

Phase 3: sustaining change – weeks 5-8

Program philosophy: Quitting smoking is a process and not an event
Specific Aims

• To assess program completion and smoking cessation rates at end-of-treatment

• To examine predictors of successful program completion and smoking cessation
Sample for Evaluation

678
Intent-to-treat

155
Program non-completers

523
Program completers

- Analysis is based on a retrospective chart review of participants in the TDC program (between Sept 2007 and Dec, 2011) from 7 clinics, in Vancouver, Canada
- Smoking cessation: 7-day point-prevalence of abstinence at end of treatment (i.e., anytime between 8 weeks to 26 weeks) verified by expired CO levels
Substance Use Disorder & Psychiatric Disorder History (N = 678)
## Sample Characteristics (N = 678, 57% male)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>Stand. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of participant (years)</td>
<td>48.0</td>
<td>11.0</td>
</tr>
<tr>
<td>Age at smoking initiation (years)</td>
<td>15.1</td>
<td>5.8</td>
</tr>
<tr>
<td>Importance of quitting (scale of 0 ‘low’ to 10 ‘high’)</td>
<td>9.0</td>
<td>1.4</td>
</tr>
<tr>
<td>Confidence in quitting (scale of 0 ‘low’ to 10 ‘high’)</td>
<td>7.2</td>
<td>2.4</td>
</tr>
<tr>
<td>Number of cigarettes smoked per day</td>
<td>20.4</td>
<td>10.3</td>
</tr>
<tr>
<td>Fagerstrom Test for Nicotine Dependence (scale of 0 ‘low’ to 10 ‘high’)</td>
<td>6.0</td>
<td>2.0</td>
</tr>
<tr>
<td>CO level at baseline (ppm)</td>
<td>20.9</td>
<td>14.2</td>
</tr>
</tbody>
</table>
Program Completion (n = 523/678)

Completed program?

- Yes: 77.1%
- No: 22.9%
Smoking Cessation* Outcomes at end-of-treatment

Intent to treat (N=678)

- Quit: 32.7%
- Not quit: 67.3%

Program completers (n = 523)

- Quit: 40.3%
- Not quit: 59.7%

*Smoking cessation at end-of-treatment (i.e., anytime between 8 weeks to 26 weeks) verified by expired CO levels
Smoking cessation by SUD and PD among program completers (n = 523)*

* No statistically significant differences between groups
Smoking Cessation by length of stay in the program (n = 678)*

* Statistically significant differences between groups
Multivariate predictors\(^a\) of program completion (n = 674)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Odds Ratio</th>
<th>95%CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (referent)</td>
<td>1.0</td>
<td>-</td>
</tr>
<tr>
<td>Female</td>
<td>1.78**</td>
<td>1.19-2.65</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>1.03**</td>
<td>1.01-1.05</td>
</tr>
</tbody>
</table>

Hosmer-Lemeshow goodness-of-fit: \(\chi^2 = 1.80\) (DF=8), \(p = .986\)

\(^a\) Employing a two-step model building process in which variables associated with smoking cessation (at alpha < 1.0) in the unadjusted analyses are included in a second-step for adjusted analyses. Only variables which were significantly predictive of smoking cessation in the final adjusted multivariate model are shown.

* = \(p < .05\), ** = \(p < .001\), *** = \(p < .001\)
Multivariate predictors\textsuperscript{a} of smoking cessation among program completers at end of treatment (n = 494)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Odds Ratio</th>
<th>95%CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Psychiatric Disorder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None (referent)</td>
<td>1.0</td>
<td>-</td>
</tr>
<tr>
<td>Mood disorder</td>
<td>.90</td>
<td>.57-1.42</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>.53*</td>
<td>.29-1.00</td>
</tr>
<tr>
<td>Psychotic disorder</td>
<td>.69</td>
<td>.31-1.57</td>
</tr>
<tr>
<td>FTND at baseline</td>
<td>.89*</td>
<td>.80-1.00</td>
</tr>
<tr>
<td>Number of Visits to the TDC</td>
<td>1.07***</td>
<td>1.04-1.10</td>
</tr>
</tbody>
</table>

Hosmer-Lemeshow goodness-of-fit: $\chi^2 = 3.45$ (DF=8), $p=.903$

\textsuperscript{a} Employing a two-step model building process in which variables associated with smoking cessation (at alpha $< 1.0$) in the unadjusted analyses are included in a second-step for adjusted analyses. Only variables which were significantly predictive of smoking cessation in the final adjusted multivariate model are shown.

* = $p <.05$, ** = $p <.001$, *** = $p <.001$
Conclusions

• The Tobacco Dependence Clinic provides an innovative model of tailored tobacco dependence treatment which combines behavioural counselling with no-cost pharmacotherapy for individuals with a history of substance use and/or psychiatric disorders for up to 6 months.

• With intensive tobacco dependence treatment provided within Mental Health and Addictions services, individuals with a history of substance use and/or psychiatric disorders are able to achieve smoking abstinence.
Smoking Cessation Outcomes among Individuals with Substance Use and/or Psychiatric Disorders

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Abstract

Objectives: The population of individuals with substance use (SUD) and/or psychiatric disorders (PD) has a high prevalence of smoking and a consequent increase in tobacco-related morbidity and mortality when compared to the general population. The aim of this study is to examine the outcomes of a program in a real-life setting which takes a tailored approach to smoking cessation among individuals with SUD and/or PD.

Methods: A retrospective chart review of tailored tobacco dependence treatment was performed on individuals with histories of SUD and/or PD attending a Tobacco Dependence Clinic (TDC) program in Vancouver, British Columbia, Canada. Participants of the TDC received a combination of behavioural counselling and pharmacotherapy for smoking cessation. Data from 540 participants enrolled in the TDC between September 2007 and May 2011 was reviewed. Outcome measures included seven-day point-prevalence abstinence (validated by expired carbon monoxide) and program completion rates.

Results: For individuals who completed the program the abstinence rate was 41.1% (187/408). Significant predictors of successful smoking cessation were: a) a lower expired carbon monoxide level at baseline (OR=.98, 95%CI=.96-1.00), and b) a longer duration of treatment (OR=1.09, 95%CI=1.05-1.12). Significant predictors of program completion were: a) being female (OR=1.86, 95%CI=1.21-2.87).

Discussion: Tailored smoking cessation among individuals with SUD and/or PD yields modest end-of-treatment smoking cessation rates and can be an effective approach to reducing the burden of tobacco use in substance use and mental health treatment settings.