

YATI Not-On-Tobacco (N-O-T) Evaluation

Final Report

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Introduction

The Not-On-Tobacco (N-O-T) program is a voluntary school-based program for youth (ages 14-19) who are daily smokers and motivated to quit. The aim is to assist youth in understanding why they smoke and help them to develop the skills, confidence, and support needed to quit. The N-O-T program employs several different strategies to assist youth: small group discussion, writing in journals and hands on activities. The program is offered over 10 weekly sessions (each generally 50 minutes in length) led by an adult who has been trained as a facilitator of the program. Weeks 1-4 are focused on preparation for quitting, week 5 is the quit day, and weeks 6-10 are focused on relapse prevention and reinforcement. The program is primarily offered during the lunch break, although some schools offer it during class time or a combination of class time and lunch break.

This program was developed by the American Lung Association. The Youth Advocacy Training Institute (YATI), a program of The Lung Association-Ontario, piloted the implementation of this program in 11 Ontario schools from 2014 to 2017. YATI has modified the ALA N-O-T program for the Ontario context, including infusing youth engagement strategies into the curriculum, revising Train-the-Trainer, adapting evaluation tools and altering the facilitation model. For example, the Ontario N-O-T program is co-facilitated by school staff and health unit staff, thereby providing greater opportunities for cessation supports and programming at the local level. Further detail on the Ontario N-O-T program is provided in Appendix A: Not-On-Tobacco (N-O-T) Program Poster.

Key Evaluation Questions

The main evaluation and investigative questions were as follows:

1. What do we know about young people who participate in the N-O-T program and their smoking behaviours and use of other tobacco products?
2. How well does the N-O-T program support young people in quitting or reducing tobacco smoking?
3. How manageable is the N-O-T program for adult allies to implement and run with their groups?
4. To what extent is the program perceived as being valuable and meeting the needs of participants?
5. What are the secondary impacts of the program on the lives of young smokers who participate?
6. To what extent are clients satisfied with the N-O-T training? What is the training doing well and what could it do better?

YATI partnered with the Ontario Tobacco Research Unit (OTRU) to evaluate the N-O-T program using a mixed methods approach. This report summarizes qualitative findings from N-O-T facilitator interviews (n=10), and evaluation survey data from 9 N-O-T program pilots (n=109) and 3 N-O-T Train-the-Trainer sessions (n=38).

Methods

Quantitative Data

The American Lung Association (ALA) requires that their evaluation survey instruments be implemented with the Ontario program pilots. Following the ALA protocol, 3 standard evaluation surveys were implemented: N-O-T About Me 1 (at program intake), N-O-T About Me 2 (at end of program) and N-O-T About Me Follow-Up (at 6-months post-program). N-O-T About Me 1 measured participant demographics, tobacco use behaviours, motivation to quit, confidence and thoughts about quitting, attitudes towards smoking, quit attempts and social influencers. N-O-T About Me 2 and N-O-T About Me Follow-Up measured current tobacco use, thoughts about quitting and attitudes towards tobacco use.

A 4th survey, N-O-T Tell Us What You Think, was also administered to participants and facilitators at the end of the program to provide feedback on how well the program worked to help young people quit and reduce smoking, impacts of the program on other areas of participants' lives, and feedback on the curriculum (activities, resources, content and facilitation).

N-O-T About Me 1 and 2 were administered by trained facilitators at the start and at the end of the program, and N-O-T About Me Follow-Up was administered by school staff 6 months after the program end date. All surveys were completed by N-O-T program participants in-person using pencil and paper.

N-O-T program facilitators also participated in a Train-the-Trainer session prior to the start of the N-O-T program. A Client Satisfaction survey was administered to Train-the-Trainer participants.

Evaluation survey data was analyzed from 9 of the 11 N-O-T program pilots, due to limited data available from the 2 most recent pilots that were implemented in early 2017.

Univariate and bivariate descriptive statistics were conducted for all survey data. Statistical significance was set at $p < 0.05$. All analyses were conducted using SAS 9.4. Open-ended survey responses were grouped by common response topic and reported qualitatively.

Qualitative Data

2 OTRU researchers conducted semi-structured, in-depth facilitator interviews with 10 individuals involved in implementing the N-O-T program. Interviews were conducted between February and April 2017 and occurred over the phone. The 10 facilitators were purposively selected from 22 facilitators who were involved in 1 or more of the 11 program pilots, to represent diversity in geographic location, roles (school staff vs. public health staff) and schools. YATI facilitated recruitment by providing OTRU with implementer/facilitator contact information. An OTRU researcher recruited facilitators via email. Facilitators included Youth

Engagement Coordinators, Public Health Nurses and School Staff (i.e., Teachers, Child and Youth Workers, Social Workers, Guidance Counsellors).

Interviews lasted 20-60 minutes, were audio recorded with the facilitator's permission and transcribed by a third party provider. The interviews focused upon 5 topic areas: background information (role, program participant and school characteristics), implementation facilitators and challenges, program impact, cessation challenges and facilitators, and opportunities for improvement. The data were analyzed thematically by interview question by 1 researcher and discussed among the project team.

Survey Results

N-O-T Program Participant Characteristics

Over 3 years, the 9 N-O-T program pilots being evaluated in this report had enrolled 109 youth smokers. The number of participants at intake for each session ranged from 7 to 20; the average number of participants per session was 12.

The average age of participants was 16 years (range: 10-20 years), with the majority of participants in grade 12. There was equal representation of males and females in the program. Among program participants, the average age of smoking their first cigarette was 12 years (range: 4-17 years) (Table 1).

Participants who completed the intake survey smoked an average of 12 cigarettes per day. Half of participants had moderate motivations to quit at intake, with 24% highly motivated and 27% with little or no motivation to quit; only 25% were highly confident in their ability to quit at intake. More than 70% of participants had previously tried to quit but could not (Table 1).

While the intake survey did not collect data on participants' geographic, social and cultural identity, interviews with program facilitators found that many of the youth who participated in the N-O-T programs were from rural (and in some instances remote) communities and belonged to 'priority populations', including self-identified Indigenous groups. Facilitators also reported that some of the program participants had differing learning abilities and styles, and many were dealing with stressful life issues, such as challenging domestic circumstances and relationships, poverty, substance misuse and mental health issues.

Table 1: Characteristics of N-O-T Program Participants at Intake, 2014-2016

Characteristic	No. of Participants (%)^a
Overall	109 (100%)
Age (mean, SD ^b)	108 (16.0, 1.43)
Grade	
9	16 (15%)
10	21 (19%)
11	25 (23%)
12+	47 (43%)
Sex	
Male	54 (50%)
Female	54 (50%)
Age of first cigarette (mean, SD ^b)	12 (2.5)
No. cigarettes per weekday (mean, SD ^b)	107 (11.7, 12.8)
No. cigarettes per weekend day (mean, SD ^b)	94 (12.0, 19.4)
Smoked in past 30 days	
Yes	100 (92%)
No	9 (8%)
Smoked on 20 of past 30 days	
Yes	84 (77%)
No	25 (23%)
Motivation to quit	
None/Low	29 (27%)
Medium	53 (49%)
High	19 (18%)
Very high	7 (6%)
Confidence to quit	
None/Low	41 (38%)
Medium	40 (37%)
High	13 (12%)
Very high	14 (13%)
Previous unsuccessful quit attempts	
Yes	75 (71%)
No	31 (29%)

^a Percentages may not sum to 100% due to rounding. Missing data was excluded from proportions.

^b SD, standard deviation.

^c Frequency of missing data is greater than 10% (n=11).

Attrition Rate

Of the 109 program participants, 43 (39%) completed the end of program survey; 31 respondents (28%) completed the 6-month follow-up survey (Table 2). Non-participation in the end of program survey varied by grade, where those in higher grades (11-12+) were more likely to not complete the end of program survey than those in younger grades. There was no significant difference in non-completion of the end of program survey by gender, motivation to quit, confidence to quit or previous unsuccessful quit attempts (data not shown).

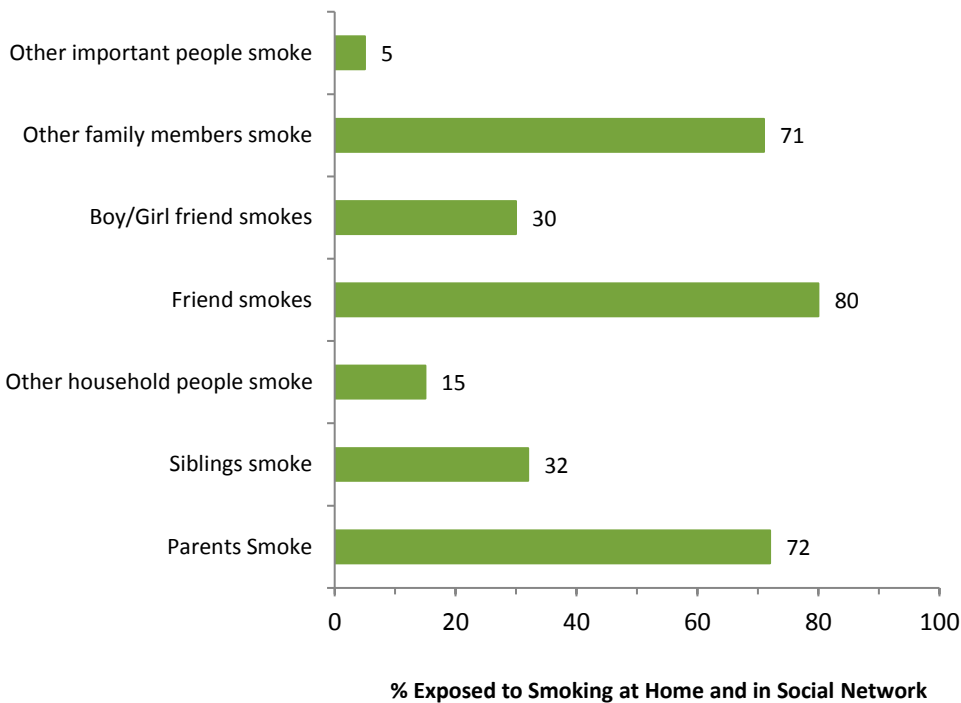
Table 2: Summary of Program Participation and Survey Response

	Intake (N-O-T 1)	End of Program (N-O-T 2)	6-Month Follow-up
Sample size n (no. of completed surveys)	109	43	31
Retention from baseline	--	39%	28%

Social Influences

The vast majority of program participants at intake (n=109) were exposed to smoking at home. Almost 3 in 4 participants had parents who smoke and 32% had siblings who smoke. Friend smoking is also known to be a significant influence on youth behaviours: 80% of participants had close friend(s) who smoke cigarettes (Figure 1).

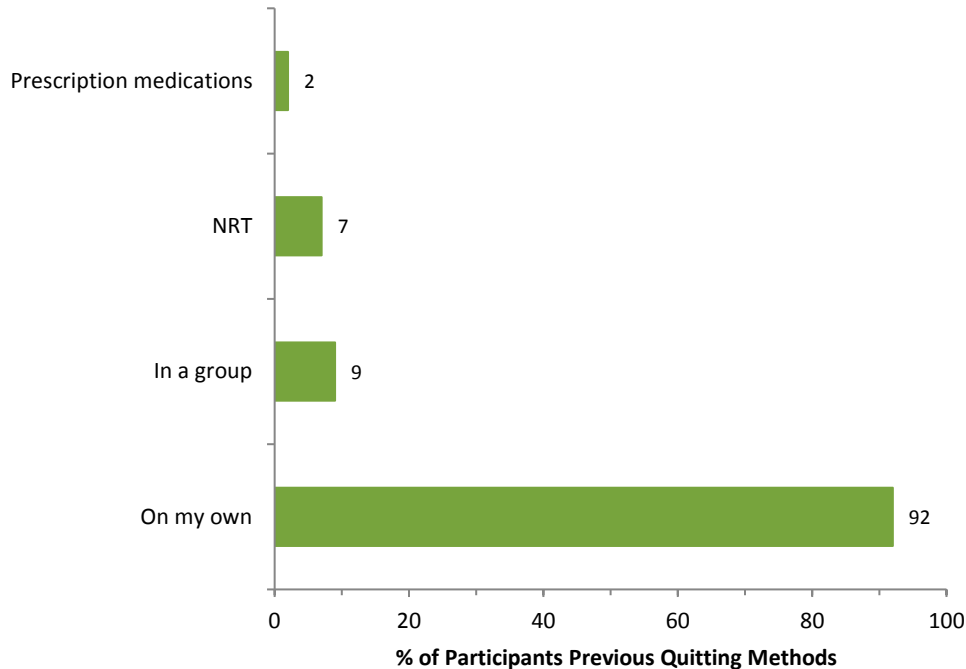
Figure 1: Social Exposure to Smoking at Home and in Social Networks



Cessation Methods Previously Used

At intake, participants identified previous smoking cessation strategies they had used in the past. Of the 109 respondents at intake, 90 participants reported using 1 or more methods to quit in the past. Predominately, the youth had tried to quit on their own (92%). A small proportion of participants had used groups (9%), nicotine replacement therapy (NRT) (7%) and prescription medications (2%) (Figure 2). 1 respondent had used an online program while no respondents reported using healthcare providers or quitlines.

Figure 2: Cessation Methods Previously Used by Participants at Intake



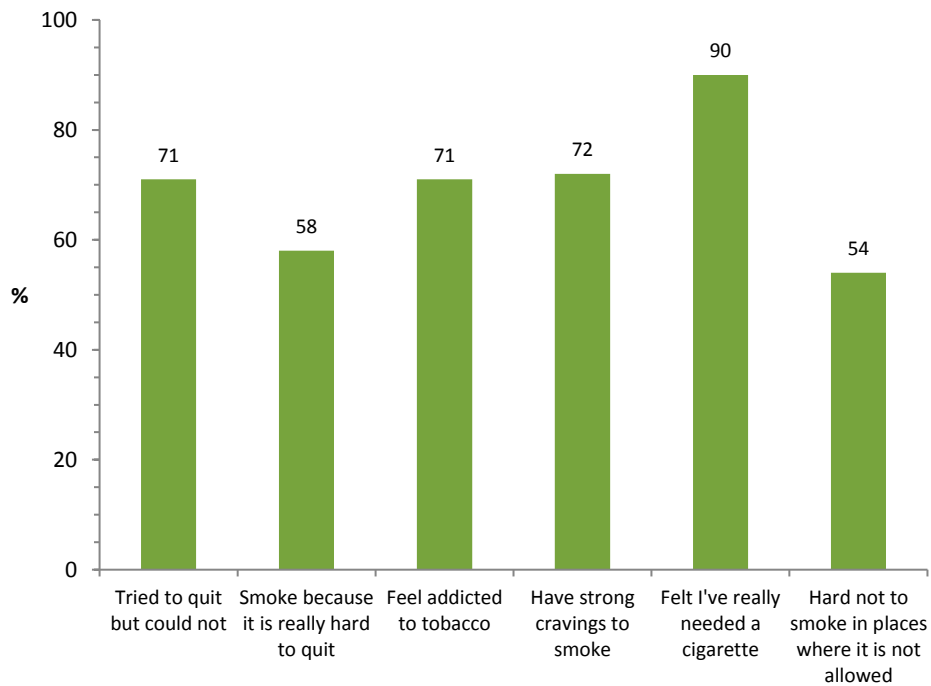
Withdrawal Symptoms Previously Experienced

This survey also asked participants about their experience with withdrawal symptoms from smoking abstinence. At intake, participants reported experiencing the following symptoms:

- Find it hard to concentrate (54%)
- Feel more irritable (70%)
- Feel a strong need/urge to smoke (69%)
- Feel nervous, restless or anxious (62%)

Smoking Habits of Program Participants

7 in 10 program participants felt addicted to tobacco. The same proportion had tried to quit but could not and had strong cravings to smoke. Almost all participants indicated that they had really needed a cigarette in the past. Just over half had found it hard not to smoke in places where it is not allowed and 58% smoked because they find it really hard to quit (Figure 3).

Figure 3: Smoking Habits of Program Participants at Intake

Short-Term Quitting Behaviours

Quitting Smoking

In total, 109 young people participated in the 9 pilot programs. Of the 43 participants who responded to the end of program survey, 5 (12%) were not using tobacco or smoking any cigarettes per day at the end of program. The true quit rate may be lower than 12% because this only includes those participants who responded to the end of program survey. An intent-to treat (ITT) analysis would assume all non-respondents are still smoking; however, this is overly conservative and more appropriate for clinical trials. More data is needed to inform the program impact on short and long-term quitting.

Reducing Consumption

The 43 participants who responded to the end of program survey were smoking fewer cigarettes per day than they were at intake. Program participants were consuming approximately half of the number of cigarettes they were smoking at the beginning of the program (Table 3).

Table 3: Change in Mean Number of Cigarettes Smoked per Day Among End of Program Survey Respondents

Survey	Mean Weekday Cigarettes/Day Mean (SD) ^a	Mean Weekend Day Cigarettes/Day Mean (SD) ^a
Intake ^b (n=42)	12.0 (11.2)	11.1 (9.1)
End of Program ^c (n=35)	6.1 (6.4)*	5.9 (6.7)*

^a SD, standard deviation

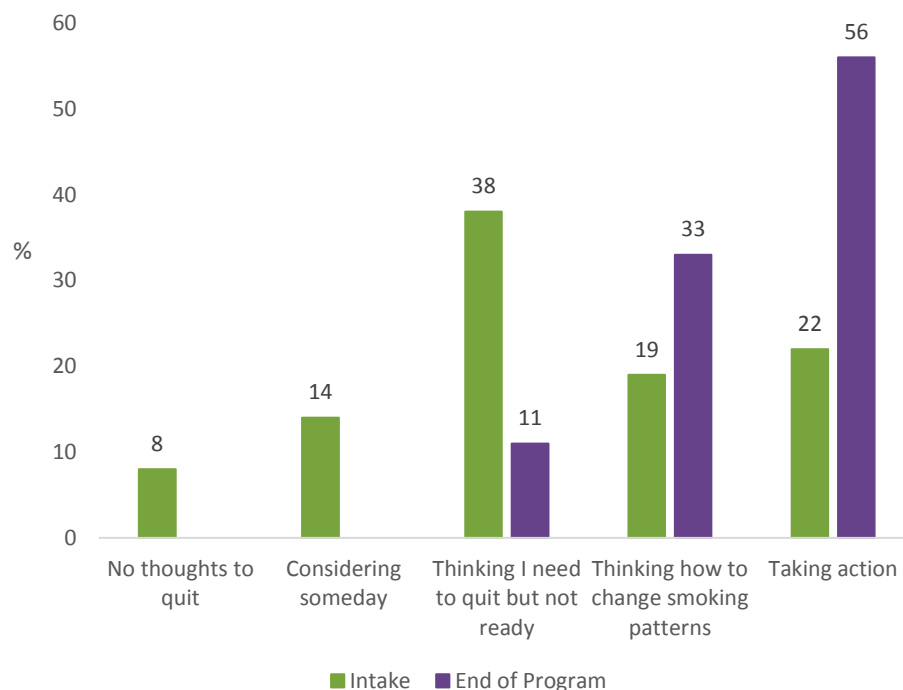
^b Cigarettes per day at Intake are calculated only for those who responded to N-O-T 2

^c Cigarettes per day are only calculated among those who provided cigarettes/day responses at End of Program

* $p < 0.001$ for difference between intake and end of program (paired t-test)

Changing Attitudes or Intentions

N-O-T participants who completed the end of program survey (n=43) reported making significant progress along the quitting ladder. The quitting ladder measures respondents' stage of quitting from not thinking about quitting through to taking action. At intake, 22% of respondents were not thinking much about quitting in the near future (i.e., had 'no thoughts to quit' or were 'considering quitting someday'), 38% were thinking they needed to quit but were not quite ready, 19% were thinking about how to change their smoking patterns and 22% were taking action to quit smoking. At the end of the N-O-T program, only 11% of respondents were thinking that they 'need to quit but were not quite ready'. Most respondents (89%) had progressed to the final 2 stages, either 'thinking about how to change their smoking patterns' (33%) or 'taking action to quit' (56%) ($p < 0.001$) (Figure 4).

Figure 4: Quitting Ladder Classification at Intake and End of Program

Other Cessation Behaviours

No specific survey item was available to identify changes in the number of quit attempts for the first 9 pilot sessions. However, new survey questions have been added to the end program and 6 month follow-up surveys for pilot sessions starting in January 2017. There were not sufficient programs or participant data at the time of writing this report to comment further on quit attempts made during the program.

Similarly, there were no specific survey items available to assess alternative tobacco (including e-cigarette) use in the first 9 pilots. Related survey items were added for the sessions starting January 2017; however, there are limited participant data for further analysis at this time.

Long-Term Quitting

The 6-month follow-up survey has a total of 31 responses. Descriptive numbers are provided below; however, there is insufficient data and statistical power to conduct quantitative analyses or draw conclusions about the long-term impact of the program.

Long-Term Quitting and Smoking Reduction

6 of the 31 respondents (19%) reported not smoking at the time of the 6-month follow-up survey. However, an intent-to-treat (ITT) analysis would result in much lower rates. The true number who are smoke-free at 6-months follow-up will be less than 19% but higher than an ITT calculated rate. Among those who were still smoking at 6-months follow-up, participants smoked an average of 9.0 (SDⁱ=11.6) cigarettes on weekdays and 5.4 (SD=7.2) cigarettes on weekends.ⁱⁱ

Long-Term Change in Attitudes or Intentions to Quit

The quitting ladder was used to assess student readiness to take action on smoking behaviours at 6-months follow-up. 6 respondents had either not thought about quitting (n=3) or indicated that they will consider quitting someday (n=3), 10 respondents thought they needed to quit but were not quite ready. 40% of respondents were making changes to their smoking behaviours: 4 were thinking about how to change their smoking patterns and 7 were taking action to quit.

ⁱ SD = standard deviation.

ⁱⁱ This excludes 2 data outliers where the reported response was 100 cigarettes per day. There was some reporting by facilitators that this question was confusing and participants were trying to calculate their cigarettes per day over the past week. For these reasons, responses greater than 50 cigarettes per day were excluded from the calculation of the mean.

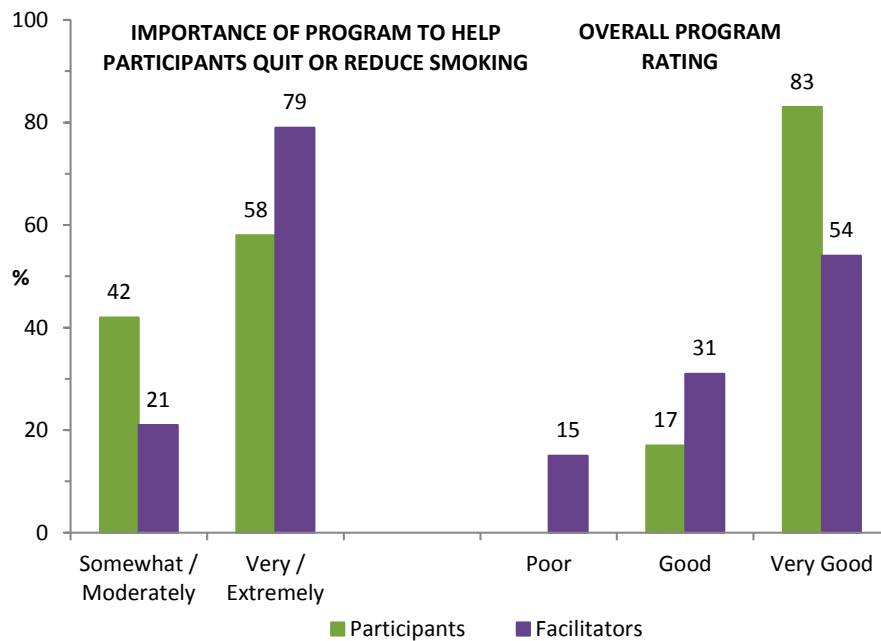
Facilitator and Participant Satisfaction with N-O-T Program Components

Quantitative aspects of the Facilitator and Participant satisfaction surveys are noted below:

- 84% of participants and 93% of facilitators felt the number of participants was just right.
- While the majority of participants and facilitators felt the program was the right duration/length, 30% of each group felt the program was too short.
- The journal exercise was rated the least useful aspect of the program for both participants (65%) and facilitators (57%). Participants rated all other activities and resources as good or very good. Facilitators highly rated the discussions, activities and food (100% for each), while 69% felt the handbook was a useful resource.
- All participants (98% or more) rated facilitators highly in all areas: ‘knowledgeable’, ‘helpful’, ‘good listeners’, ‘youth-friendly’, and ‘created a comfortable environment’ (strongly agree or agree).
- Participants and facilitators felt the program provided new information, fun activities, good flow and opportunities for discussion.

Almost 60% of participants and 79% of facilitators felt the program was very or extremely important in helping students quit or reduce their smoking. All participants rated the program highly, with 83% rating it “very good”; however, facilitators rated the program a little less favourably with just over half rating it “very good”, 31% “good” and 15% “poor”. (Figure 5)

Figure 5: Perception of Program Importance to Support Cessation Behaviours and Overall Rating by Participants and Facilitators

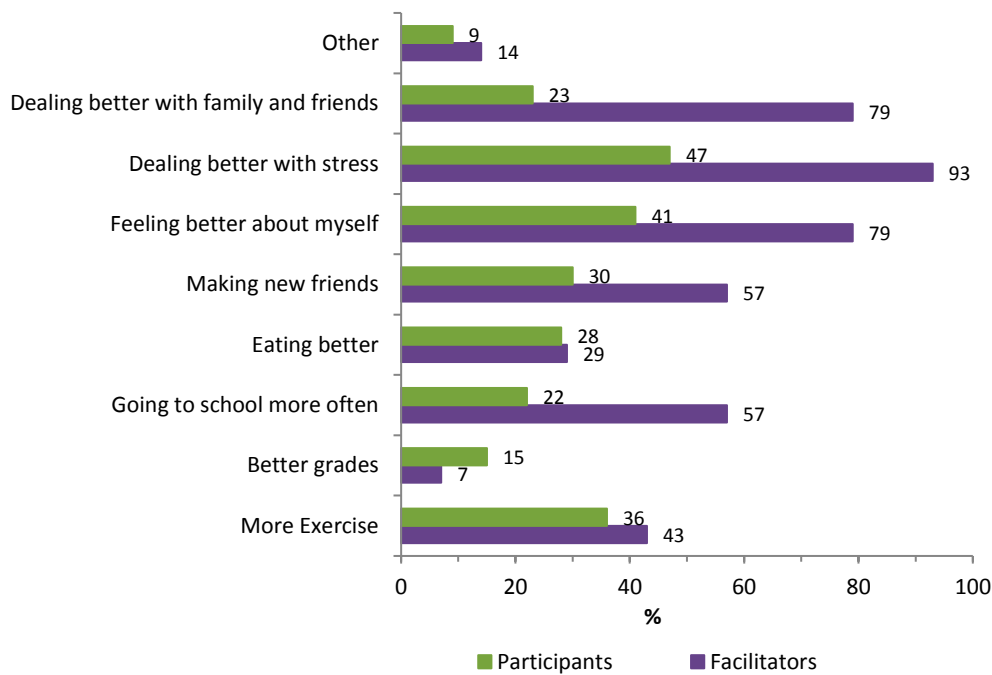


In open-ended questions on the Client Satisfaction Survey, participants reported that they really liked the support, discussions, facilitators and food. The majority of those responding to the satisfaction survey (n=78) indicated there was nothing they did not like about the program. A number of participants reported that they felt the program should be longer or run all year, 1 did not like writing so they did not like the journals, and another noted that talking about smoking made them crave a cigarette.

Program Impact on Other Areas of Participant Lives

The satisfaction surveys from participants (n=81) and facilitators (n=14) provided perceptions on how the program may have helped other areas of participants’ lives. The majority of facilitators felt the program helped participants to deal better with stress (93%), deal better with family and friends (79%) and feel better about themselves (79%). While participants were most likely to report that the program helped them to deal better with stress (47%) and feel better about themselves (41%), this was much lower than the perceptions of the facilitators. Other areas where the program had a positive impact included: more exercise, making new friends, eating better, going to school more and, to a minimal extent, getting better grades (Figure 6).

Figure 6: Perceptions of Program Impact in Other Areas by Participants and Facilitators



N-O-T Train-the-Trainer

N-O-T facilitators were trained by YATI using Train-the-Trainer programming. Participants in the training completed the N-O-T Train-the-Trainer client satisfaction survey. Table 4 shows satisfaction scores from 3 fiscal years (2014-15, 2015-16 and 2016-17). After July 2015, client satisfaction surveys were revised to include performance indicators recommended by the Health Promotion Resource Centre (HPRC) Evaluation Performance Measures Working Group. HPRC performance indicator recommendations included changes to questions about content and motivation, as well as changes to the scale used for the overall score. Training participants were asked to rate the degree to which they agreed or disagreed with statements relating to training on a **4-point Likert scale**; however, some post-HPRC recommendations include a scale ranging from 1 to 5 (very low to very high). These changes are noted in table footnotes.

Generally, training participants strongly agreed with all of the survey statements, indicating **exceptional satisfaction** with the activities, content, motivation and facilitation. The overall quality of the training was rated **very high** (range: 4.37-5.0) for all 3 fiscals. Participants also **strongly agreed** that they felt motivated to prevent youth from starting smoking or helping youth to quit, felt confident in talking to youth about smoking prevention, were going to use the information learned and would recommend the training to others.

A new question was added to the survey in 2016 and 2017 (post-HPRC) regarding the extent to which the training will enhance practice (scale of 1-5). For both years, training participants responded that the program will enhance their practice '**A Great Deal**' (4.80-4.56).

Table 4: Satisfaction Results of N-O-T Train-the-Trainer, 2014-15, 2015-16, and 2016-17

Survey Statement	2014-2015	2015-2016		2016-2017
	Mean (SD) (n=8)	Pre-HPRC Mean (SD) (n=6)	Post-HPRC Mean (SD) (n=15)	Mean (SD) (n=9)
ACTIVITIES (scale out of 4)				
The activities were interesting/ creative/fun	3.78 (0.46)	3.50 (0.55)	3.80 (0.41)	3.78 (0.44)
The activities helped me better understand the topic	3.75 (0.46)	3.50 (0.55)	NA	NA
The activities gave me a chance to work with and meet others	3.88 (0.35)	3.50 (0.55)	3.87 (0.35)	3.67 (0.50)
Activities (overall)	3.79 (0.35)	3.50 (0.55)	3.83 (0.36)	3.72 (0.44)
CONTENT (scale out of 4)				
I learned some new information	3.75 (0.46)	3.50 (0.55)	NA	
I found this training useful	NA	NA	3.93 (0.26)	3.67 (0.50)
The information was relevant to my activities in health (e.g., volunteering, projects, campaigns)	3.63 (0.52)	3.67 (0.52)	NA	
This training met my needs	NA	NA	3.93 (0.26)	3.67 (0.50)
I learned most of what I wanted to	3.75 (0.46)	3.67 (0.52)	NA	
I am more aware of this topic	NA	NA	3.60 (0.63)	3.78 (0.44)
I have learned strategies to engage youth in a meaningful way	3.75 (0.46)	3.33 (0.52)	3.80 (0.41)	3.56 (0.53)
I have the skills and knowledge required to support youth with tobacco prevention/cessation activities	3.75 (0.46)	3.33 (0.52)	3.63 (0.52)	3.56 (0.53)
Content (overall)	3.73 (0.41)	3.50 (0.45)	3.76 (0.29)	3.64 (0.38)
MOTIVATION (scale out of 4)				
I feel motivated to prevent youth from starting smoking or helping youth quit	3.88 (0.35)	3.50 (0.55)	NA	
I am going to use the information learned today	NA	NA	3.80 (0.41)	3.78 (0.44)
I feel confident that I can talk to youth about smoking prevention	3.88 (0.35)	3.33 (0.52)	NA	
I would recommend this training to others	NA	NA	3.93 (0.26)	3.56 (0.53)
Motivation (overall)	3.88 (0.35)	3.42 (0.49)	3.87 (0.30)	3.67 (0.43)
FACILITATION (scale out of 4)				
The trainers were knowledgeable about this topic	3.88 (0.35)	3.67 (0.52)	4.00 (0.00)	3.78 (0.44)
The trainers were helpful and responsive to the group	3.88 (0.35)	3.67 (0.52)	4.00 (0.00)	3.78 (0.44)
The trainers made me feel that I could share my opinions openly with the group	3.88 (0.35)	3.67 (0.52)	4.00 (0.00)	3.78 (0.44)
Facilitation (overall)	3.88 (0.35)	3.67 (0.52)	4.00 (0.00)	3.78 (0.37)
ENHANCEMENT (scale out of 5)				
To what extent will this training enhance your practice?	NA	NA	4.80 (0.41)	4.56 (0.53)
OVERALL (scale out of 5)				
Overall, I would rate this training as:	5.00 (0.00)	5.00 (0.00)	4.87 (0.35)	4.39 (0.55)

Note: Participant feedback was rated on a 4-point Likert scale: 1=strongly disagree, 4=strongly agree on all statements, except for 'Enhancement of Practice' (1=not at all, 2=slightly, 3=somewhat, 4=quite a bit, and 5=a great deal) and 'Overall' (1=very low and 5=very high) in the post-HPRC surveys. For compatibility, we changed the Overall rating pre-HPRC to the 5-point scale.

Qualitative Results from Facilitator Interviews

Semi-structured, in-depth interviews were conducted with 10 facilitators purposively selected from a pool of 22 facilitators who were involved in at least 1 of the 11 N-O-T program pilots. The interview sample was selected to represent diversity in geographic location, roles (school staff vs public health staff), and schools.

Overall, the 10 facilitators who were interviewed represented 10 of the 11 N-O-T program pilots in 4 geographic locations: North West (n=3), South West (n=4), North East (n=2) and East (n=1) Ontario. Their roles included: Public Health Staff (n=6) (4 Youth Engagement Coordinators (YECs) and 2 Public Health Nurses (PHNs)) and School Staff (n=4). Both a Public Health Staff and a School Staff member were interviewed from 4 of the 10 program pilots represented in the sample (some facilitators represented more than 1 program pilot).

School and N-O-T Participant Characteristics

The facilitators who were interviewed noted that the schools in which N-O-T was implemented ranged in size from 300-700 students and mostly served rural communities. Many schools served Indigenous students who lived on and/or off their Reserve, and many of the schools served low and mixed-income communities. A few schools were known for special education programs.

“It's a small school in [Name of Community]. We have a very low income area and a lot of drug use in the area, yeah there seems to be...a lot more issues at our school than there typically is in a lot of the other schools in the area and I think it's just a matter of so many low socioeconomic students coming together in 1 building. It's got about 700 students and most of them come from small towns in the area and some live on farms.”

- School Staff, South West

“It's a JK to Grade 12 school and it probably has about 350 secondary school students...they get bussed in from all over the place so a lot of rural youth attend that school but then it's also located in a town of maybe 6,000 people so there's some town kids but also a lot of bussed in students and the school itself is known for its specialty in kind of special ed.”

- PHN, South West

“So we have about 700 students probably 30%, 35% of our students are First Nations or Métis or Inuit, FNIM, so we probably have a higher level of smoking than provincially...we're in a community of 6,000 people. That's how many people live in [Name of Community] and we're about four hours away from the largest center that would operate I don't know an airport or major hospital.”

- School Staff, North West

“We have a high percent of special needs students because we have a program it's called Senior Integrated in our school. It's for students who might have like a mild intellectual delay...to something more severe like a non-verbal autism so we have a high population of special needs students.”

- School Staff, North West

According to the facilitators, N-O-T groups generally consisted of more males, although there were a few groups that were primarily female. 1 YEC noted that there was an equal mix of males and females in the 2 groups they facilitated. 1 school staff member noted the role of gender in program participation, with fewer girls participating when there were boys with strong personalities in the program.

Facilitators described N-O-T participants as either Indigenous (2 groups consisted of primarily self-identified Indigenous youth) or white. Some groups consisted of close friends, while others were a mix of friend groups and/or acquaintances.

“The majority of participants we had were a sort of tight knit group of young Aboriginal girls so...their friends were there to kind of support them in their quit attempt and you know getting out of school, getting out of [Name of City]...A lot of them...come in from the other communities cause [Name of School] is the only high school in our area and there's a few other communities that we pull youth.”

- YEC, North West

“We have predominantly white population at our school. More boys than girls. Any girls that I did get to come out they were even more hesitant and I think it was cause we had such strong boy personalities that came that it kind of, I honestly think it scared some of the girls away.”

- School Staff, South West

Most of the facilitators interviewed noted that N-O-T participants had pre- or co-existing social or health issues (e.g., low SES, home life issues, involved with child welfare, substance misuse and depression) and were coping with significant stress in their lives. N-O-T participants also had different learning abilities, and some attended alternative education programs (i.e., Center for Occupational and Personalized Education (COPE)) to accommodate their own learning styles and preference for school-attendance.

“For the most part they were students that weren't attending classes regularly. Some of them were even students that were in what we call COPE for students that can't handle the normal classroom situation... Some students are very open about their drug use...”

- School Staff, South West

“...so ones that don't attend school all that regularly... lots of stress, lots of social conditions...kind of precarious work life for families if they were living with their parents, and learning abilities across the spectrum... and then there were some

students that were college bound... and yeah some were quite into sports and others weren't so it was kind of a mixed bag really."

- PHN, South West

"I'm going to say predominantly...they had pre-existing issues or co-existing issues so struggling with alcohol, depression, mental health, they might have been First Nations, they might have been low SES. Basically if you went down the list of your priority populations on any scope of the surface they would hit them all."

- YEC, South West

Overall, facilitators felt that school connectedness was lower among the young people involved in the N-O-T program. However, a few facilitators had observed some evidence of school connectedness in their groups. Consistent with survey results, N-O-T participants were also described as having family and friends who smoke.

Recruitment

For the most part, School Staff were responsible for recruiting and ensuring that youth continued to attend N-O-T sessions. N-O-T participants were recruited in various ways. These included:

- Selecting youth to participate
- Offering participation in lieu of outstanding detention
- Personal conversations with students in classes, the smoking pit and in physical and health education classes
- Promotions through other staff members, such as the Child and Youth Worker, Guidance Counselor and Vice Principal
- School announcements and posters
- Personal written invitations with swag
- Peer-to-peer recruitment

1 School Staff facilitator noted the importance of a non-judgmental approach when recruiting participants to the N-O-T program. This facilitator adopted a no-pressure approach in their promotional work. Having a pre-disposing relationship with the students also helped with recruitment.

"As soon as they felt pressure like you know cause I could see even me approaching them and saying like it's like a quit smoking like I could see the cringe you know and so you had to really like [Laugh] I think your script has to be really again like non-judgmental. It has to be like there's no pressure, this could be something good for you if you're interested in it, you know take some time to think about it like you know not you have to come today and this is now and you know so nothing was forced."

- School Staff, North West

Attrition

Facilitators indicated that although the number of regular N-O-T participants ranged from 7-10, additional students sometimes attended on an ad hoc basis. 4 facilitators experienced issues with attrition over the course of the program, while 3 experienced some attrition and 2 felt that attrition was not an issue. The main barriers to attending the N-O-T program was the time of year it was offered. Offering the program in January was problematic because this often spanned an exam period, a new semester and March break. Further, the ability of youth to participate might be limited if they started new classes or a co-op semester. Winter weather and bus cancellations were also reasons that students missed sessions.

“...if they didn't finish in a couple of occasions it had to do with exam time which ran into a new semester...sometimes the students' schedule had changed so they might have started in January but then they couldn't finish because they might have had a co-op program and they weren't allowed to actually get back to the school to take part, and in a couple of occasions students just dropped out.”

- YEC, South West

“...we had a lot that came and went so as far as completing the program several showed up on the last day but it wasn't like they were all consistently attending each week. We sort of took each opportunity if they came to plant a seed, but they didn't all receive the full content. I don't know that we had anybody that came to every single session...the one struggle we had was it had to be done by YATI's fiscal yearend and we couldn't start it until the New Year so that presented some challenges because there were exams and March Break and weather issues that made it more challenging.”

- PHN, South West

Offering the program over lunch was another barrier to attending N-O-T sessions because youth often considered this their time to socialize. General attendance issues, not having friends in the group, conflict with other group members and the emergence of nicer weather in the spring were also reasons to explain participant attrition. 1 facilitator noted losing participants because they were vaping instead of smoking.

“I think they just lost interest. It was their lunch hour and for them their lunch hour was their main time to socialize of course...so I think they weren't willing to give up their lunch.”

- School Staff, South West

“That was the other thing. If the weather was nice then they'd be walking up to [coffee shop] like you know it was harder to get them to come in. If it was crappy weather then they would come in for the meal...”

- School Staff, South West

“Some of the other ones I think were vapers more than smokers...I don't think they were ready to quit and I think they feel like vaping is quitting... and I totally understand that cause that's how some of my family members have quit smoking... but I mean the youth are vaping for a whole different reason...”

- School Staff, North West

Implementation and Program Facilitators

Organizational buy-in at the school level was a key implementation enabler identified by facilitators (Table 5). Having supportive, engaged and passionate principals, School Staff and school boards helped to make the program flow easily and solve problems in a timely manner. School Staff were important for helping to promote and recruit N-O-T participants, facilitating relationships between the YEC or PHN and the youth, providing insight and organizing logistical details. Similarly, School Staff valued the knowledge and resources that Public Health Practitioners brought to the program.

For 3 Public Health Practitioners, identifying and working with youth champions or leaders in the school's smoking community was important for promoting the N-O-T program and recruiting participants. Incentives, such as food, gift cards, free NRT, weekly draws for prizes (i.e. personal trainer at YMCA) and Health Unit swag also facilitated recruitment of participants.

Facilitators considered YATI's training helpful and valued the educational, hands-on experience it provided. YATI was also credited with making the N-O-T program flow easily by providing advice about curriculum, group activities and youth engagement, and facilitating administrative tasks (i.e., evaluation surveys, invoices). YATI's financial support for food was considered essential because it was identified as an important reason why youth participated in the N-O-T program.

Table 5: Facilitator Perspectives- N-O-T Implementation Facilitators

Theme	Facilitator Perspectives
School Buy-In	<p><i>Having a principal who had sort of gone in and allowed kids to be excused from regular curricular activities was really huge...and she would stop in now and again to just let the kids know that she was behind the program so that was excellent.</i></p> <p style="text-align: right;">- School Staff, North West</p> <p><i>It was easily implemented because it was so well supported from YATI, the Health Unit, the School Board itself at a broad [level], the schools, the administration, and then having a teacher champion. I never felt like I had a hurdle that I couldn't overcome...</i></p> <p style="text-align: right;">- YEC, South West</p>
Teacher Support	<p><i>I feel the teacher really does help me a lot in trying to get the students, make sure they're coming to the sessions- and she's a very positive role model. I find that's a huge support that you definitely need.</i></p> <p style="text-align: right;">- YEC, North East</p> <p><i>The teachers who I worked with were really passionate about this and super accommodating and very welcoming, and just all around awesome people. So for me that made it a lot more bearable when I felt like, 'Am I connecting with these young people? Are they getting anything out of it?'</i></p> <p style="text-align: right;">- YEC, North West</p>
Youth Champions	<p><i>... there's usually one [student] that you'll need for the others to buy-in... I knew that [the student] could influence the others so I made a point to get his buy-in...and so just engaging with them, answering questions, including him, having him be the helper, those types of things.</i></p> <p style="text-align: right;">- YEC, Eastern</p> <p><i>...before we actually setup the N-O-T program I would have the teacher adult ally identify one, two or three leaders within the smoking population then they would pull them in and I would actually do a pre-interview or pre-orientation with them and then it was their responsibility to recruit. It was not the responsibility of me. I didn't look the part. I was not a smoker so my job was to make sure that they felt valued and that they realized that they had a very important role to play... it was that peer-to-peer youth engagement that is a best practice method and I felt that I should actually utilize...</i></p> <p style="text-align: right;">- YEC, South West</p>
Incentives	<p><i>...I think having the Health Unit, because they had access to free gift cards for example...we gave out prizes that were through the Health Unit...it wasn't much, it was you know a key fob or something but it was just those things that I didn't have access to myself.</i></p> <p style="text-align: right;">- School Staff, South West</p> <p><i>I think having, well the food and the, fidget type items...yeah those are important. I think the board with the rules you know making it really feel like a group and the prizes... I think all of that contributed to making it an interesting special atmosphere to be in.</i></p> <p style="text-align: right;">- School Staff, North West</p>
YATI Support	<p><i>...paying for the food that was absolutely what those kids needed and yeah if you didn't have the food I don't think I would have got any kids out so the fact that YATI was covering that cost was very, very important.</i></p> <p style="text-align: right;">- School Staff, South West</p> <p><i>... we did get emails and we had links to the American YATI website so there were things there that we could sort of pull off and support and [Name of YATI Staff Member] would also send YouTube links... that would be discussion starters and that was really good.</i></p> <p style="text-align: right;">- School Staff, North West</p>

Almost all of the facilitators interviewed noted that N-O-T participants really liked the free meals provided as part of the program. Providing balanced, healthy meals was an incentive to participate and enabled many who do not have the resources to bring their own lunch or purchase lunch. A few felt that without offering food, the program would not have happened or attrition

would have been more of an issue. In some cases, the program participants worked together to choose the healthy meals. (Table 6)

Youth also had a preference for non-classroom, informal settings; interactive, movement and technology-based activities (versus sitting, written activities) and the opportunity to talk as a group. Offering the program in a safe space was also important. Most sites offered the program during the lunch period, however some sites allowed students to miss class to participate in the program (i.e., offer the program during half of lunch and half of class time, or during full class time). Facilitators felt this helped to recruit participants because they did not have to give up their personal time, and also because it sent a message to students that the program is meaningful and the school cares about them. In some implementation sites, students could only miss class to attend N-O-T if they were attending their other classes.

A focus on stress and stress-reduction techniques, having a rotating co-facilitator to represent different community services of interest to participants (i.e., youth advisor, alcohol and drug counselor) and the opportunity to volunteer in community tobacco control initiatives were additional aspects of the N-O-T program that appeared to work well.

Table 6: Facilitator Perspectives- What Worked Well About the N-O-T Sessions

Theme	Facilitator Perspectives
Free Meals	<p><i>The free food helped to get kids in the door. Some of these students are extremely impoverished, and don't have enough food as it is.</i></p> <p style="text-align: right;">- School Staff, North West</p> <p><i>They loved getting fed. [Laugh]. It was huge. It wouldn't have happened without the food. It brought everybody together, I think some of these kids probably don't even eat lunch as it is, yeah I truly believe it could not have happened without that funding.</i></p> <p style="text-align: right;">- PHN, South West</p> <p><i>The one thing that they liked is there was a food budget and they got to choose the food as long as there was healthy choices...I think that was that empowering piece...they were the ones who actually brainstormed the healthy choices and of those healthy choices they got to pick what they wanted and they were also responsible for setup and clean up. Again, it's just that empowering piece- that it's their program.</i></p> <p style="text-align: right;">- YEC, South West</p>
Interactive Activities	<p><i>I don't know if you know what a Kahoot! is but it's like an online little game that students could play. So you throw on the statistics or you know choice A, B, C or D and they have to choose...so they learn oh yeah that was the right answer... then we gave prizes at the end and the students just love it cause they can do it on their phone. It's all digital so it's something I use in class a lot... you know just making it more engaging to them was important.</i></p> <p style="text-align: right;">- School Staff, South West</p>
Safe and Informal Setting	<p><i>I think the other thing was it was a very open and transparent environment where there were rules and expectations but they were fair... they were allowed to talk openly and honestly any way they so felt. So I didn't have any restrictions on language...I mean pretty much you can use any language you want as long as it was not offensive to someone directly or a certain population...but I want them to feel comfortable and if that's the way they talk, that's the way they talk.</i></p> <p style="text-align: right;">- YEC, South West</p> <p><i>They liked that it wasn't like a regular classroom setting and that there was just lots of different things to do...the variety... so that appealed and the casual nature of it all.</i></p> <p style="text-align: right;">- PHN, South West</p>
During Class Time	<p><i>The youth said...and this has happened at other schools... because their perception is that they're not valued or the school sees them in a certain way and that they're judged because you know they're smokers and whatnot, but they felt like having a program like this offered that they mattered... and so they were showing up to school mostly on those days when group was being run...they felt it sent a message that oh the school does care about us.</i></p> <p style="text-align: right;">- PHN, South West</p> <p><i>We had students showing up to school just to go to the N-O-T program cause they really enjoyed that portion but they weren't going to English or Math and so when I realized that the N-O-T program was successful within the group...then I used it as basically a reward system mechanism so they would actually go to class. So a couple of times we actually had to ask a couple of students to leave only for them to come back and ask to be reinstated and the only way they were able to be reinstated is that Guidance had to prove they were going to class.</i></p> <p style="text-align: right;">- YEC, South West</p>
Stress Reduction	<p><i>Well I think there's a website it's called Calm.com and I just kind of opened that up and there was different like music and visual options...that you can play if you're sitting at your desk- like take a study break for instance or whatever so I just kind of showed that and taking them through the stress [module].</i></p> <p style="text-align: right;">- YEC, Central East</p> <p><i>What they seemed to respond better to than what I gave them credit for at the start was some meditation techniques, some breathing techniques we went through because it really turned into a dealing with stress kind of 8 weeks [Laugh]...because the root of their smoking seemed to be not just habit and mostly addiction but rooted around dealing with stress so they really liked activities and discussions around how to manage that so then the meditation stuff came through nicely.</i></p> <p style="text-align: right;">- PHN, South West</p>

Implementation and Program Challenges

A combination of program intensity and time constraints were the main challenges encountered by facilitators when implementing the N-O-T program. Some facilitators noted that the N-O-T curriculum was too intense for the short amount of time they had to run the program. Building relationships with the students was time consuming, but also important to creating a safe, trusting environment.

“The binder was awesome. It gave tons, more than we needed. Honestly, because of our time limit and constraints, it was overwhelming... there was just no way that we could get through a 40 minute session in 20 minutes with chatty kids that just wanted to talk. So what I would have liked to have seen was it run a lot longer. I think because of the grants that's why it was so condensed to like the 10 week session, but I think that really took away from the effectiveness of the program because it was like throw this stuff out to the kids and then that was it.”

- School Staff, South West

“...there is a lot of curriculum to get through in an hour and kind of getting these young people warmed up to actually put in the work takes a lot more time.”

- YEC, North West

Some facilitators felt that the N-O-T curriculum lacked relevance for the groups of young people that they worked with, and recommended more tailored curricula and materials based on social and cultural context.

“The program was pitched to me by ... the Lung Association. I thought it was geared towards First Nations, Inuit, Métis students, but it turned out to be more generic.”

- School Staff, North West

“The N-O-T [participant] characteristics were pretty much the opposite of everything that Public Health tries to do in all honesty [Laugh]. Even the way the N-O-T training was setup which was great but... the whole binder itself did not lend itself to the population, which predominantly had pre-existing issues or co-existing issues so struggling with alcohol, depression, mental health, they might have been First Nations, they might have been low SES. Basically if you went down the list of your priority populations on any scope of the surface they would hit them all. Very rarely would I have someone who would actually look the part of anybody on the front [of the binder].”

- YEC, South West

1 interview participant felt that the linear structure of the curriculum was a challenge since their program followed more of a drop-in vs. weekly attendance model. Another participant had

challenges demonstrating the importance of engaging directly with high priority populations (face-to-face vs via poster or radio) to Health Unit management. Recruitment and retention of program participants, and completing evaluation surveys were also identified as challenges by a few of the facilitators interviewed.

When facilitators were asked what did not work well about the N-O-T sessions, journaling and activities that resemble school work were noted. A few facilitators felt that journaling was not a good fit for the youth with whom they were working, although it did work well in 1 group.

“That [journaling] was better received than I thought... it wasn't awful [Laugh]; and I thought oh boy here we go and they did okay with it whether it was more doodling and stuff.”

- PHU, South West

Examples of ‘school work’ activities included handouts and anything that required students to write, such as writing exercises (i.e. write down your stressors) and completing questionnaires. 1 School Staff facilitator noted that written activities can be intimidating for those who have different learning abilities and recommended adapting to deliver information in different ways. A YEC noted a similar issue with information handouts, and recommended different ways to communicate this information.

“It felt like school. It's like here's your book and I mean the journal felt like not school and the fidget toys felt not like school and the food felt you know warm and the conversation felt warm and the rules felt safe but now, write your stressors or write your plan or why you want to quit smoking or all those different things. So for some students too who were having difficulty writing like sometimes I'd sit beside them and write for them in the book and just try to encourage more of the thought process than the writing. I think that's the biggest challenge... I recognize that those topics are important. It's more of the delivery. How much could we eliminate the writing?”

- School Staff, North West

Group dynamics were also an issue for some N-O-T sites. Facilitators noted that conflict between cliques and students who were in a relationship, or having strong personalities in the group can create the perception that the group is an unsafe space. This may influence recruitment and retention rates.

“Obviously there's different cliques in the room... as soon as you talk to the other clique it's confrontational or they take it the wrong way and then it will start an argument, and then unfortunately that's what happens and they just didn't come back because they got the impression that the session is a negative spot for them, it's not a safe space.”

- School Staff, North West

More support for working with digital resources, facilitation techniques, minds-on activities and providing a more detailed overview of each session were additional suggestions to improve YATI training.

What were the impacts of the N-O-T program on participants' commercial tobacco use?

Consistent with survey findings, almost all of the facilitators interviewed noted that young people had reduced the amount they smoked as a result of the N-O-T program. A few facilitators said that some youth had made quit attempts or had quit smoking completely during the N-O-T program.

“We had one young woman talk about how she wanted to quit completely because she was graduating that year and she wanted to be tobacco-free by the time she graduated so that was really nice and I'm pretty sure she was our only successful complete smoker.”

- YEC, North West

“There were some [quit] attempts and those who quit were probably close to quitting when they joined. There were lots of relapses and then [quit] intentions going back and forth along the way which was great.”

- PHN, South West

Facilitators also observed improved knowledge and awareness about the health effects of smoking (“a couple of students were unaware of the health effects”), tobacco industry practices, the relationship between life circumstances and smoking (i.e., stress), myths about quitting, community quit smoking resources and quitting as a process that might take some time.

“I think it was important that the instructor said ‘so there's a bump in the road...try again’, so it doesn't feel like you failed the N-O-T program [Laugh]...the impact is that this is lifelong, this is one support group... you can continue this as you grow up, this is the way to take care of yourself so I think it gives the impact that there are resources out there and when you're ready, this is how we can help you and you know in the future they'll be there too.”

- School Staff, North West

“We had another conversation about like there are so many companies that used to do animal testing and now they're not doing it but the tobacco industry is still one of those industries that is doing really shady things and we shouldn't be supporting them... We had a few [participants] get really riled up about it and they were just like ‘oh my God that's so disgusting’ and I was like yep but you know it still happens.”

- YEC, North West

What helped N-O-T participants change their tobacco use behaviour?

According to the facilitators who were interviewed, peer support or the opportunity to talk with peers in a safe, non-judgmental environment and have youth-led conversation facilitated changes in knowledge, attitudes and smoking behaviors. The perception that an adult cared about the wellbeing of the young person (“*just like going to a group each week where they knew the adults there genuinely cared*”), school staff support outside of the N-O-T sessions (when public health was not present) and the program’s knowledge component also helped facilitate changes. Other facilitators included wanting to be a role model for younger family members (“*a lot of them said they wanted to be like better role models for nieces and nephews*”), the motivational interviewing approach and carbon monoxide monitors (“*kids who had cut back to 1 a day, they wanted to get tested like want to see the number change-that was amazing*”).

“I think the program had some really excellent information and so kids were just sort of given information at the time that they needed it. So each lesson was broken into whatever the focus of that week was and it was not, ‘You have to quit today, you know you’re a bad person cause you smoke’.”

- School Staff, North West

“I think that they were sitting with their peers, talking about the same addictive behaviour, allowed to be open and honest about their addictive behaviour and they were actually able to identify when they started, why they started, and the triggers that keep them engaged in smoking, which they probably have never done before. They were also in an environment that was safe, that was fun, and that was consistent, that had rules- a lot of these individuals come from homes that don’t have any rules- and so I think that was part of the safety.”

- YEC, South West

What challenges did N-O-T participants experience when trying to change their tobacco use behavior?

8 of the facilitators who were interviewed identified lack of social support as the main barrier that N-O-T participants experienced when trying to quit smoking. Smoking was normalized within family and friend groups. Public Health facilitators described how 2 N-O-T participants had parents who were unsupportive of their quit/reduction attempt (“*Like 1 kid’s mom called him a wussy for trying to quit and so when you’ve got an environment like that it’s like you know it’s tough*”). Some parents who smoked were supportive, but still supplied their sons/daughters with cigarettes and approached them to share a smoke. Creating personal smoke-free spaces in their homes was challenging for participants whose parents or guardians smoked indoors. (Table 7)

Smoking was also normalized through friendship networks. Some students only had friends who hung out in the ‘smoking pit’ at school. Facilitators also noted that some students were scared that giving up smoking might mean giving up their friendship groups.

1 School Staff facilitator noted that sometimes students have no place to go on break or during lunch if they want to avoid the smoking pit. This facilitator invited students to hang out in their classroom and watch Netflix to pass the time, and recognized the need to create safe spaces for students trying to quit smoking.

Facilitators also highlighted the stress in N-O-T participants' lives as a barrier to quitting or cutting back, such as family and relationship stress, transitional stress and stress related to concerns that were perceived as more important, such as substance use and mental health issues (i.e. anxiety, depressions, ADHD).

1 participant noted that offering the program over January was a barrier because it spans exams and the start of a new semester, potentially stressful times in students' lives. Addictive behaviour related to the school schedule was also noted.

“...realizing that that bell that rings after class one or at lunchtime or at the end of the day is kind of like that bell for Pavlov's dog... it goes off and then students actually think that they have to go and have a smoke, but letting them realize that if they can get over those two to four minutes, if they can actually bust through that barrier and not actually go, and stick to it, the craving will subside or in some cases go away, and then it will come back eventually...it's that constant battle that they have to do.”

- YEC, South West

Table 7: Facilitator Perspectives- Barriers to Addressing Commercial Tobacco Use Behaviour

Theme	Facilitator Perspectives
Family smoking	<p><i>We had one student that wanted to quit and by the end she was one of the ones that did quit but she had said her mom was a smoker and her mom wasn't encouraging her basically and she'd set things, like set packs of cigarettes out. So she would come to us and she would be like my mom's not helping me, I don't know how to get her to see that I need to do this for my own self and it was almost like a little bit of counselling right...sometimes it was outside of the N-O-T program cause she was one of the ones that she just wasn't comfortable with the other students.</i></p> <p style="text-align: right;">- YEC, East</p> <p><i>A lot of them did come from smoking homes, smoking inside homes and so you know a challenge for them was finding their own smoke-free space even within their homes like even if it's just their bedroom that was kind of one major thing that we talked about is like trying to find you know the impact of your environment on your behavioural habits but trying to change your environment, recognizing that they were 15 right and how much say do they have at home so that was definitely a barrier for them, some of them.</i></p> <p style="text-align: right;">- YEC, East</p> <p><i>...I would say the ones that had the most difficulty were, well obviously the ones with a lot of stress, but those who lived with people who are heavy smokers and parents who were providing cigarettes and smoking in the home...it was tough to help them find ways to break free from that when they would have good intentions and then go home to a place where it's okay...'hey, why don't we smoke together and socially kind of support one another'.</i></p> <p style="text-align: right;">- PHN, South West</p>
Friend smoking	<p><i>I think number one would be that they are still engaged in the same group of friends and so making those personal sacrifices to maybe move away from their friend group.</i></p> <p style="text-align: right;">- YEC, South West</p> <p><i>I found with our students that a lot of them were so marginalized they didn't have a social group except for those kids that were in the smoking pit. So one of the things that I would have liked to have done was... I always eat in my classroom, I can throw on YouTube videos, you can have Netflix on, whatever, come and eat in here if you want but there was nowhere for them to go except for in the smoking pit [Laugh].</i></p> <p style="text-align: right;">- School Staff, South West</p>
Perceived stress	<p><i>They sure did [reduce smoking] but then again we went into exams and a lot of them said oh yeah stressful time. January is great because everybody wants to make a New Year's resolution, but at the same time you know it's a very stressful time, right? You're finishing a semester; you're starting a new semester.</i></p> <p style="text-align: right;">- PHN, South West</p> <p><i>I think that mental health played a lot in it. I feel like some of the youth that we were working with had other issues going on whether it was attention deficit or things that are a little bit less common...</i></p> <p style="text-align: right;">- YEC, North West</p> <p><i>So we were working with some youth who were also using injectable drugs and I think using tobacco was kind of on the backburner of importance for them.</i></p> <p style="text-align: right;">- School Staff, North West</p>

What other (non-tobacco) impacts did the N-O-T program have?

School Connectedness

Public Health and School Staff facilitators described instances of improved school connectedness as a result of the N-O-T program. According to a PHN, N-O-T participants disclosed feeling “ostracized” or like the “black sheep” of the school. Offering a program for their specific group contributed to a personal sense of belonging and value within their schools.

“What they told me is the impact that it had was...feeling appreciated or acknowledged or that there was some value for them being at school. I think they perceive themselves to be an ostracized group...they're the black sheep of the youth, of the school. So I think offering something that was probably the biggest thing. And then that they could actually miss a bit of class to attend and the impact to be able to address their smoking I think was huge.”

- PHN, South West

A YEC described a similar outcome among N-O-T participants in the schools in which they worked. This YEC took an active role in working with school staff to improve relationships with N-O-T program participants and heard about more positive student-teacher experiences afterwards.

“...one of the things that came out loud and clear time and time again is that that specific population never felt that they were part of the school, that teachers didn't talk to them, didn't identify with them and thought that they were bad asses, thought that they were drop-outs when in fact all they ever wanted was a chance. So they mentioned time and time again that teachers never acknowledge them, they never come over and talk to them, and so my job as an adult ally was challenging the teachers and letting them know that this is what the students have actually said and it's really important that they take the time out of their day to treat them with the dignity and respect they do with all the other students...they were very receptive to it and I know the students said that their overall experience at school post [N-O-T program] was good.”

- YEC, South West

Knowing that an adult cared about participants and their health reportedly facilitated quitting and reduction attempts. Improved school attendance was also noted by 2 facilitators.

“Like I said I know that for some their attendance did get better.”

- YEC, East

“...their attendance went up in school, their participation at school went up, they actually showed up at assemblies cause they were getting recognized...they would actually receive their certificate of completion at the yearend assembly along with all the other academic, sports awards which was big for them and the principal or the vice-principal would acknowledge that these students never go to assemblies ever, ever, ever.”

- YEC, South West

Skill Development and Health Behaviours

The N-O-T program also fostered skill development among participants, which included leadership, coping with stress, setting goals and planning. The benefits from having a healthy, nutritious lunch were also noted (“*I don't know if half of them would have even have a bite to eat during the school day*”). At 1 site, N-O-T participants were introduced to new culinary experiences, since each meal was culturally tailored. Joining school athletic teams or clubs were also noted impacts.

“I was the badminton coach and I'm like hey, you're trying to quit smoking why don't you come out for badminton and she didn't necessarily qualify for the team- that was a competitive team- but she made it to a couple exhibition tournaments and I think that was kind of neat for her so just a thing for her to belong to.”

- School Staff, North West

Community Engagement

Improved familiarity and involvement with local community agencies was reflected in interview participant accounts. A YEC and a PHN noted referring N-O-T participants to community partners, many of whom co-facilitated N-O-T sessions. The ability to engage males in the community health system was also a positive impact, since females were reportedly more likely to use these services.

“The biggest benefit to all of this is to have these young men come to me after, like I would normally never see [Laugh] and to get to know me a bit better but then trust [me]. ‘I've got to get my girlfriend in to see this’ ... I followed up with a couple of them with mental health stuff just to check in to see how they were doing and I felt like it gave them a chance to maybe start to see their own health and to access healthcare and hopefully they won't think twice about talking with their doctor ...so I think that was one of the biggest benefits from my perspective for these young men, that the healthcare system is there for them.”

- PHN, South West

“I think that a couple of the kids went on to be involved in community groups with the Native Friendship Centre here in [Name of City] ...[Name of YEC] sort of facilitated both groups so they knew her and I think that was definitely an advantage for them.”

- School Staff, North West

As a result of N-O-T, some participants also started volunteering in their communities. At 1 school, N-O-T participants decided to clean up the smoking area as a way to give back to their school community. At 3 other schools, N-O-T participants helped run health education sessions to prevent younger youth from starting to smoke. Others worked as part of the Uprise campaign (a campaign to eliminate pro-tobacco norms of alternative youth aged 13-18).

“There was some really good discussion around what they thought could happen to better their school and their community ...I think they realize they're littering the ground, and part of their making amends so to speak was they wanted to spend an afternoon of cleaning up.”

- YEC, South West

“I allowed each and every individual who finished the program to help me run an hour education session with Grade 7 and 8 students talking about tobacco use, talking about smoking in the movies, talking about second-hand smoke, and talking about their own personal experiences with tobacco and addiction...I would say that 85% of all students who finished wanted to go to Grade 7 and 8's and talk about their own experiences and help the young people not start in the first place.”

- YEC, South West

School Impacts and Adult Allies

For schools, reported impacts included having visibly less people in the smoking area and more dialogue about creating alternatives to the smoking area. 1 facilitator noted that the N-O-T program helped improve compliance with the school's smoke-free policy. While some schools had already undertaken commercial tobacco initiatives, N-O-T was considered a springboard for more work in this area. 1 facilitator also noted that other schools had become interested in implementing the N-O-T program and described more positive relationships between students and teachers. Both Public Health and School Staff facilitators described building or strengthening relationships with students and with the schools, reaching and engaging hard to reach youth and obtaining greater perspective about youth smoking cessation and commercial tobacco reduction generally.

Discussion

From 2013-14 to 2016-17, the Youth Advocacy Training Institute (YATI) piloted the Not-On-Tobacco (N-O-T) program in 11 Ontario high schools. Evaluation survey data were analyzed from 9 of these program pilots. In total, the 9 pilots had enrolled 109 youth smokers in the N-O-T program. At intake, the average number of N-O-T program participants per pilot was 12; however, facilitator interviews found that attendance fluctuated over the course of the program with reports of 7-10 regular participants within each pilot.

The aim of the N-O-T program is to assist youth in understanding why they smoke and help them develop the skills, confidence, and support needed to quit. Specific research and evaluation questions were identified to determine whether the N-O-T program is meeting this aim, and to inform the implementation and content of the program.

1. What do we know about young people who participate in the N-O-T program, and their smoking behaviours and use of other tobacco products (e.g., e-cigarettes)?
2. How manageable is the N-O-T program for adult allies to implement and run with their groups and do they perceive the program as valuable and meeting their needs?
3. To what extent are clients satisfied with the N-O-T training? What is the training doing well and what could it do better?
4. Does the N-O-T program support young people in quitting or reducing tobacco smoking?
5. What are the secondary impacts of the N-O-T program on the lives of young smokers who participate?

The proceeding discussion addresses each of these questions drawing on data from N-O-T surveys (participants and facilitators) administered from 2014 to 2016, and interviews with facilitators conducted in winter/spring 2017.

What do we know about young people who participate in the N-O-T program, and their smoking behaviours and use of other tobacco products?

The N-O-T program reached a diversity of young people between grades 9 and 12, with the majority in grade 12. Population survey data shows prevalence rates starting to climb in grades 11 and 12 (Ontario Tobacco Research Unit, 2017). Thus the N-O-T program is targeting the appropriate grade level.

While intake data indicated an equal mix of male and female participants, facilitators reflected during the qualitative interviews that sessions mostly consisted of males, with a few groups almost exclusively consisting of females. Several facilitators also noted that many of the youth who participated in their N-O-T programs were from rural (and in some instances remote) communities and belonged to ‘priority populations’, including self-identified Indigenous groups. Facilitators also noted that participants had a variety of learning abilities and styles, and tended to be dealing with different life issues, such as challenging domestic circumstances and relationships, poverty, substance misuse and mental health issues. As a result, N-O-T participants were dealing with a significant amount of stress in their lives, which perpetuated their smoking.

Interviews also found that participants belonged to social worlds that were characterized by smoking. Family and friend smoking was the norm and perceived by facilitators as a significant influence on participant smoking behaviour.

While N-O-T participants were moderate to heavy smokers at program intake, many had tried to quit in the past and most had motivations to quit, although most also reported low confidence in their ability to quit. This aligns with the characteristics of Canadian youth who smoke (Reid 2017). Of those who had tried to quit before their participation in the N-O-T program, most had tried to quit on their own and only very small proportion had used groups, NRT or prescription medication to quit; no respondents reported using healthcare providers or quit lines.

The use of different types of tobacco products or alternative tobacco (e.g., e-cigarettes) was not fully captured in the survey questions. However, vaping did emerge in some facilitator interviews, in particular vaping being used in the context of cessation and recreationally in schools, and the need for more training for School Staff and information about vaping in the N-O-T curriculum. A few of the facilitators noted the high use of marijuana and its relationship to commercial tobacco within their schools.

How manageable is the N-O-T program for adult allies to implement and run with their groups? Do they perceive the program as valuable and meeting their needs?

While challenges to implementation were noted (intensity of curriculum, program is too short, attrition issues), the majority of facilitators interviewed directly and indirectly described the N-O-T program as manageable and valuable to program participants and their schools. Key enablers to implementation included organizational commitment at the health unit and school levels, a school/public health co-facilitator model and financial support for food, which was an important incentive for youth participation. All of the facilitators interviewed noted that they would offer the program again, adapting it according to what they learned from the pilot, and improving implementation and program relevance within their schools. Similarly, survey data show high satisfaction with the N-O-T program amongst facilitators.

Tobacco interventions for youth tend to be prevention-focused rather than cessation-focused, and there is limited evaluative research about their effectiveness for youth who are disproportionately impacted by commercial tobacco (Queen's Printer for Ontario 2017). The results from the Ontario N-O-T pilot projects provide insight into what has worked well, implementation challenges and opportunities for improving school-based smoking cessation programs for priority youth. As noted by Twyman et al. (2014), smoking cessation programs should be designed to reduce acceptability and accessibility barriers and be offered in trusted community services to maximize participation by 'vulnerable' groups of youth.

Facilitators provided insight into factors that facilitated or would improve N-O-T program accessibility and acceptability. Offering the program during class time or half lunch/ half class time was important for improving recruitment and retention of participants because it respected participants' personal time and showed that the school sincerely valued the program and cared about participants. Other factors that improved accessibility included, offering the program at a time of year that did not conflict with exams, semester changes and inclement weather; and

making the program longer, more frequent and more sustained (however, having the capacity to implement the program was raised as a challenge). Adapting the program to a drop-in model was also suggested to improve accessibility, especially in schools where attendance does not follow that of a mainstream school system. Facilitators also noted that access to free nicotine replacement therapy (NRT) through the N-O-T program was an important opportunity for improvement. While YATI does not provide NRT, some sites were able to offer NRT through their local health units. This is an example of how delivering the program in partnership with health units provides additional opportunities to support youth.

Adopting a youth engagement approach to implementation helped create a sense of program ownership and participant acceptability among youth. In 1 region, for example, participant recruitment was the responsibility of youth who were considered leaders within the school's smoking community. Participants in these N-O-T sessions were also responsible for various logistical aspects of the program and volunteered in community tobacco control initiatives with the Youth Engagement Coordinator. Programs in this region experienced consistent attendance rates and very little attrition (even when N-O-T attendance was dependent on school attendance). Some research supports the use of peer-led interventions in delivering effective commercial tobacco reduction activities within a school setting (Starkey 2009, Campbell 2008).

However, the relevance of the N-O-T curriculum to the characteristics of young people was an issue raised in the facilitator interviews. Although the binder was considered to be a valuable resource, it was criticized as not lending itself to the unique groups of youth who were participating in the N-O-T program (i.e., mental health, substance use, rural and remote communities, socioeconomic disadvantage). This was especially raised within the context of First Nations, Inuit, and Métis students. A more tailored curricula and materials based on social, historical and cultural context, and appropriate community engagement in developing these are recommended to improve program acceptability, particularly in the context of commercial tobacco use by Indigenous participants (Twyman 2014, Minichiello 2016). Engagement of N-O-T participants in updating and tailoring the N-O-T program was also considered necessary. Updating facilitator training to address working with different groups of youth who are disproportionately impacted by commercial tobacco use may also be a useful approach.

Does the N-O-T program support young people in quitting or reducing smoking?

Quitting and Reducing Commercial Tobacco Use

The N-O-T program has been widely implemented in the United States (US) by the American Lung Association (ALA) since the early 1990's. Program evaluations with moderate to large samples from various states have reported positive cessation outcomes. Horn and colleagues (2005) conducted a 5-year end of program review of the N-O-T program in 5 states. These researchers reported a field-based quit rate (not smoking for 24 hours at the end of program survey) between 15.5% and 36.9% among those who completed the end of program evaluation. Intent-to-Treat (ITT) analyses (assume all non-respondents are still smoking) reported end of program quit rates ranging from 10.2% to 36.9% (Horn 2005). Compared to brief interventions, evaluations in the US have shown that participants in the N-O-T program were almost 2 times more likely to quit than those receiving brief interventions (CDC 2017). Furthermore, evaluation data demonstrate that program participants who continued to smoke were smoking significantly fewer cigarettes per day.

Evaluation survey data from 9 N-O-T program pilots identified 5 of the 43 (11.6%) end of program survey respondents to be not smoking at the time of the survey. An ITT analysis which includes all non-respondents as continuing smokers would significantly reduce this rate; however, ITT analyses are conservative since there is no consideration of non-compliance to the prescribed protocol (Gupta, 2011). Although the ITT approach is used broadly, emerging practices question the use of this approach for non-clinical studies. While the true quit rate is unknown, it would fall between respondent-only quit rates and ITT calculated quit rates. Unfortunately, the sample size of this pilot and follow-up respondents is too small to make any conclusions about the overall program quit rate. Furthermore, several program facilitators felt that those who did quit were probably close to quitting when they joined the program. However, the program may have facilitated the success of smokers who were ready to quit, helping them to progress along the quitting continuum.

The YATI N-O-T evaluation findings align with those from the US, which report that those who continued to smoke were smoking fewer cigarettes per day (Horn, 2005). YATI N-O-T survey data show that some respondents were consuming approximately half of the number of cigarettes at end of program (mean 6.1 weekday; mean 5.7 weekend day) compared to the beginning of the program (mean 12.0 weekday; mean 11.1 weekend day). Consistent with survey findings, almost all facilitators interviewed noted that program participants had reduced the amount they smoked as a result of the program. A few facilitators said that some youth had made quit attempts or had quit smoking completely during the program. N-O-T participants also appeared to have significant changes in attitudes and intentions to quit with more than half taking action to quit smoking.

The limited survey sample size precludes us from making any conclusions about the long-term impact of the N-O-T program as implemented by YATI. The 6-month follow-up data of respondents identified 6 of the 31 respondents (19%) to not be smoking at the time of the survey. However, it is expected that the true quit rate would be lower as some non-respondents would still be smoking. A Cochrane Review of the long-term effectiveness (at least 6-months follow-up) of youth smoking cessation programs included 4 N-O-T studies which showed promise, but authors noted the need for more long-term data (Grimshaw 2013). Additional data are needed to assess both short and long-term quitting outcomes of the YATI supported N-O-T program in Ontario.

It may be useful to ensure the program continues to encourage participants to make future attempts to quit as recent research suggests that it can take an average of 30 quit attempts before quitting successfully (Chaiton 2016). At 6-months follow-up, 40% of respondents indicated they were making changes to their smoking behaviours (i.e., thinking about how to change their smoking patterns and taking action to quit). This suggests the value of providing some level of continued support (e.g., check-ins, referrals to other supports within the cessation system) to help move these youth towards making a quit attempt.

The N-O-T evaluation surveys developed by the American Lung Association (ALA) did not include adequate survey items to assess the number of quit attempts made during the program and after the program has ended. Given the addictive nature of tobacco, detailed survey items are

needed to identify quit attempts made during the program as this is an important cessation behaviour and program outcome (Star 2005; Chaiton 2016; Queen's Printer for Ontario 2017).

Similarly, there was no assessment of participants' use of alternative tobacco products at any time point. The rapidly changing landscape of alternative tobacco products such as e-cigarettes and waterpipe also necessitate that the use of alternative products be monitored to fully inform tobacco use among youth. It is recommended that the N-O-T surveys be modified to capture these topic areas. (Note: Several related survey items have been added to evaluation surveys for YATI N-O-T sessions implemented in 2017).

How the N-O-T Program Supported Quitting and Reducing Smoking

It is expected that some youth will naturally make attempts to quit: in 2015, more than a third of youth smokers in Ontario made an attempt to quit in the past year (Boak 2015). While we cannot identify the full impact of the program to support youth in making a quit attempt, there is good indication from participants and facilitators that the program was important in helping students quit or reduce their smoking. Peer support was an important factor in facilitating changes in knowledge, attitudes and smoking behaviors. This included the opportunity for youth-led conversation in a safe, non-judgmental environment. The perception that an adult cared about their wellbeing and having the support of a teacher(s) outside of the N-O-T sessions (i.e., when public health was not present) were identified as factors that helped to facilitate changes in participant tobacco use behaviour.

Similarly, youth participants valued the supportive environment and opportunity for group discussion that N-O-T provided and the content of sessions. Facilitators noted that improved knowledge was a factor in behavior change, in particular regarding the health effects of smoking, tobacco industry practices, coping with stress, and community quit smoking resources. Increased understanding that relapse is likely and is part of the quitting smoking process was also considered important.

Challenges and Barriers Faced by N-O-T Participants

Challenges to quitting or reducing commercial tobacco use included a lack of social support from family and friends, the lack of smoke-free spaces at school and at home and the potential loss of friendships with smoking peers. Stress was reportedly inherent within participants' lives given the variety of social, health and economic challenges they were facing. Smoking was a way to cope with these daily stressors. These are barriers commonly experienced by groups who are disproportionately impacted by commercial tobacco use (Twyman, 2014). Tailoring interventions to address the unique barriers that different groups of youth experience (i.e. Indigenous, mental health, transient) is also recommended to improve program effectiveness (Twyman, 2014).

What are the secondary impacts of the program on the lives of young smokers who participate?

The N-O-T program reportedly helped to improve school connectedness, which was perceived by some facilitators to be lower among the young people involved in the program. It was highlighted that N-O-T participants often feel ostracized within their schools, so offering a program for this specific group contributes to their personal sense of belonging and value.

Research demonstrates that school connectedness and sense of community influences smoking and smoking cessation in young people. According to Sabiston et al. (2009), constructs such as attachment, culture, students' sense of community, and connectedness are all factors that protect youth from smoking. Based on social control theory, an adolescent's social bond to the school is *“likely protective of deviant acts such as tobacco use because he or she feels compelled, or committed, to adhere to appropriate behavioral standards”*.

Additional impacts included more positive student-teacher experiences, improved school attendance, joining school athletic teams or clubs, skill development (leadership, coping with stress, setting goals, planning), improved familiarity and involvement with local community agencies, and participating in meaningful volunteer opportunities. The N-O-T program also had a positive impact on some school environments. Reported impacts included less people in the smoking area and more dialogue about creating alternatives to the smoking area, and improved compliance with the school's smoke-free policy. While some schools had already undertaken commercial tobacco initiatives, N-O-T was considered a springboard for more work in this area.

Overall, the N-O-T program was credited by interviewees as helping to build or strengthen relationships with students and with schools, reaching and engaging hard to reach youth and obtaining greater perspective about youth smoking cessation and commercial tobacco reduction generally.

To what extent are clients satisfied with the N-O-T training? What is the training doing well and what could it do better?

N-O-T facilitators were trained by YATI using Train-the-Trainer programming. Facilitator interviews found that YATI's N-O-T Train-the-Trainer sessions were helpful and valued. In particular, interviewees mentioned the educational, hands-on experience that the training provided.

Results from the Train-the-Trainer client satisfaction surveys found that the overall quality of the training was rated very high for all offerings (2014-15, 2015-16 and 2016-17). Generally, Training participants strongly agreed with all of the survey statements, indicating exceptional satisfaction with the activities, content, motivation and facilitation. Training Participants also strongly agreed that they felt motivated to prevent youth from starting to smoke or helping youth quit smoking, felt confident in talking to youth about smoking prevention, were going to use the information learned and would recommend the training to others. Trainees also felt that the program will enhance their practice 'A Great Deal', demonstrating that they were highly satisfied with the training program.

Limitations

The American Lung Association (ALA) required that their evaluation survey instruments be implemented with the Ontario program pilots. The ALA survey items were designed to measure cessation but do not provide a clear measure of quit attempts over time. This is extremely limiting as quitting successfully often requires multiple quit attempts. In addition, the use of tobacco is not fully captured as the surveys did not ask about other tobacco and products such as e-cigarettes. The use of additional cessation supports during the N-O-T program is also unknown.

There were a few discrepancies between responses to questions about smoking behaviours. Some participants indicated that they were not currently smoking, but provided a number of cigarettes smoked per day. This may arise from confusion regarding the wording of the question for number of cigarettes smoked per day. The attitude question also has methodological challenges since the response options are not mutually exclusive and participants are instructed to select only 1. Therefore, it is difficult to use this question to infer past quit attempts. Responses to this question also conflicted with responses to the quitting ladder, which measures similar constructs.

While the response rate was low, this is not uncommon; particularly with a difficult to reach youth population. If youth did not attend the last session, they did not have an opportunity to complete the end of program survey. Further, the evaluation surveys were administered in a pencil and paper format, which can be a deterrent for young people. Tracking N-O-T program participants for a longitudinal 6-month survey (without incentives and beyond the program context) is especially challenging. If responses are higher in the future, it would be advantageous to link participants who responded to the 6-month follow-up survey with their intake and end of program surveys.

Finally, this evaluation did not include qualitative interviews with N-O-T participants. Exploring ways to incorporate more of the youth participant perspective into the evaluation is recommended.

Conclusion

Reaching youth who smoke can be a challenge; however, this may be due to inaccessibility of cessation services for this group (Queen's Printer for Ontario, 2017). This is especially the case for youth populations who are disproportionately impacted by commercial tobacco use (Indigenous, low SES, pre- or co-existing social or health and mental health issues). Evaluation data demonstrate that the N-O-T program reached youth within these priority groups.

Facilitators indicated that the N-O-T program provided a positive impact on participants' ability to handle stress, feel better about themselves, and deal better with family and friends. A smaller proportion of participants identified additional positive impacts of the program such as getting more exercise, making new friends, eating better, going to school more and, to a minimal extent, getting better grades. Findings also suggest that the N-O-T program can help to strengthen relationships between students, school staff and schools; and foster skill building such as leadership, coping with stress, setting goals and planning; and have an overall positive impact on schools and communities.

Organizational buy-in at the school level was a key implementation facilitator identified by interviewees. The role of school staff and youth champions or leaders in the school's smoking community was also important for promoting the N-O-T program and recruiting youth participants. YATI was credited with making the N-O-T program flow easily by providing advice about curriculum, group activities and youth engagement, and facilitating administrative tasks. Financial support for food was considered essential for student participation in the program.

Providing the program over a longer period of time during school year would provide more time to fully address the curriculum and build relationships with the students. Offering the program fully or partially during class time and not during an exam period, a new semester or March Break may enhance recruitment and retention. However, capacity would need to be explored. Activities that do not resemble school work were recommended for this population. The use of interactive, movement and technology-based activities were particularly valued by facilitators and participants. More support for working with digital resources, facilitation techniques, minds-on activities and providing a more detailed overview of each session were additional suggestions to improve YATI training. Tailoring the curriculum and materials (e.g., binder) to different social and cultural contexts would help to ensure that the program is relevant to target student populations.

Overall, the N-O-T program appears to be helping youth to think about their smoking behaviours and have more positive thoughts about quitting. It has been well established in the scientific literature that it can take multiple quit attempts to achieve long-term cessation in adult smokers (Queen's Printer for Ontario, 2017; Chaiton 2016). Helping young people to move along the path to quitting earlier may have a positive impact on their smoking behavior in adulthood and help to change their attitudes about smoking. Data on the impact of the N-O-T program on smoking abstinence is limited and should be interpreted with caution. However, there is evidence that the program resulted in a significant reduction in cigarette consumption, and participants significantly moved towards thinking about changing their smoking patterns or taking action to

quit. Brief check-ins or follow-up sessions after the end of program to maintain progress along the quitting continuum, address barriers to quitting such (e.g., mental health, stress), and facilitate access to support through the cessation system may help youth to stay motivated and make further quit attempts.

Qualitative interviews with N-O-T participants would provide further insights into understanding how the N-O-T program supports young people in quitting or reducing tobacco smoking and secondary impacts of the program. Including survey measures for quit attempts over time and the use of alternative forms of tobacco and other products is essential for fully understanding the impact of N-O-T on youth smoking behaviour. As of 2017, new questions have been added to the end of program and 6-month follow-up surveys to address these data gaps. However, it is important to ensure that the length of the survey not result in respondent fatigue and intimidation.

Exploring ways to increase survey response rates such as providing incentives to allow longitudinal analysis may improve opportunities for data analysis. Linking of participant data should be included in future evaluations of the N-O-T program, provided adequate sample sizes are available.

Overall, this mixed method evaluation demonstrates that the Ontario N-O-T program pilot resulted in significantly reduced cigarette consumption among respondents, and helped youth to take action to quit smoking. Although, more data are needed to determine the impact of the program on quit attempts, long-term quits and the use of other tobacco products (including e-cigarettes). Other positive outcomes of the program included helping to build or strengthen relationships between students and schools, engaging priority youth populations, and obtaining greater perspective about youth smoking cessation and commercial tobacco reduction. YATI's modifications of the ALA N-O-T program for the Ontario context has resulted in enhanced youth engagement, very high satisfaction with Train-the-Trainer, and strong support from co-facilitators (school and health unit staff) and youth participants.

References

- Boak A, Hamilton HA, Adlaf EM, Mann RE. *Drug use among Ontario students, 1977-2015: Detailed OSDUHS findings* (CAMH Research Document Series No. 41). Toronto, ON: Centre for Addiction and Mental Health 2015.
- Campbell R, Starkey F, Holliday J, Audrey S, Bloor M, Parry-Langdon N, Hughes R, Moore L. An informal school-based peer-led intervention for smoking prevention in adolescence (ASSIST): a cluster randomised trial. *The Lancet* 2008;371 (9624):1595-1602. (10.1016/S0140-6736(08)60692-3)
- CDC Prevention Research Centers. Not On Tobacco (N-O-T)—Smoking Cessation Program for 14-19 Year Olds Selected as a Model Program. Retrieved on May 10, 2017 from <https://www.cdc.gov/prc/pdf/not-on-tobacco-smoking-cessation.pdf>
- Chaiton M, Diemert L, Cohen J E, Bondy S J, Selby P, Philipneri A, Schwartz R. Estimating the number of quit attempts it takes to quit smoking successfully in a longitudinal cohort of smokers. *BMJ Open* 2016;6(6):e011045.
- Grimshaw G, Stanton A. Tobacco cessation interventions for young people. *The Cochrane Database of Systematic Reviews* 2013;Issue 8. Art. No.: CD003289.
- Gupta SK. Intention-to-treat concept: A review. *Biostatistics* 2011;2(3):109-112.
- Horn K, Dino G, Kalsekar I, Mody R. The impact of Not On Tobacco on teen smoking cessation: End-of-program evaluation results, 1998 to 2003. *Journal of Adolescent Research* 2005;20:640–61.
- Minichiello A, Lefkowitz AR, Firestone M, Smylie JK, Schwartz R. Effective strategies to reduce commercial tobacco use in Indigenous communities globally: A systematic review. *BMC Public Health*, 2016;16(1):21.
- Ontario Tobacco Research Unit. *Smoke-Free Ontario Strategy Monitoring Report*. Toronto: Ontario Tobacco Research Unit, Special Report, March 2017.
- Queen's Printer for Ontario; 2017. Smoke-Free Ontario Scientific Advisory Committee, Ontario Agency for Health Protection and Promotion (Public Health Ontario). *Evidence to guide action: comprehensive tobacco control in Ontario (2016)*. Toronto, ON: Queen's Printer for Ontario; 2017.
- Reid JL, Hammond D, Rynard VL, Madill CL, Burkhalter R. *Tobacco Use in Canada: Patterns and Trends, 2017 Edition*. Waterloo, ON: Propel Centre for Population Health Impact, University of Waterloo.

Sabiston CM, Lovato CY, Ahmed R, Pullman AW, Hadd V, Campbell HS, Nykiforuk C, Brown S. School smoking policy characteristics and individual perceptions of the school tobacco context: Are they linked to students' smoking status? *Journal of Youth and Adolescence* 2009 Nov;38(10):1374-1387.

Starr G, Rogers T, Schooley M, Porter S, Wiesen E, Jamison N. *Key Outcome Indicators for Evaluating Comprehensive Tobacco Control Programs*. Atlanta, GA: Centers for Disease Control and Prevention; 2005.

Starkey F, Audrey S, Holliday J, Moore L & Campbell R. Identifying influential young people to undertake effective peer-led health promotion: the example of A Stop Smoking In Schools Trial (ASSIST). *Health Education Research* 2009;24(6):977-988. (10.1093/her/cyp045)

Twyman L, Bonevski B, Paul C, & Bryant J. Perceived barriers to smoking cessation in selected vulnerable groups: a systematic review of the qualitative and quantitative literature. *BMJ Open*, 2014;4(12):e006414.