

Evaluation of the Run to Quit Program

Final Report

Prepared for the Canadian Cancer Society

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Executive Summary

Run to Quit is a 10-week smoking cessation program in which participants learn to run 5km while receiving practical support on quitting smoking. The program is an innovative industry partnership that builds on the successful running programs of The Running Room and the expertise of the Canadian Cancer Society's (CCS) Smokers' Helpline. The intervention is multi-layered, and consists of several evidence-based approaches, including combining cessation with physical activity through a running program, curriculum that teaches participants effective ways to quit smoking, free self-help materials on smoking cessation, involvement of family and/or friends as "quit buddies", and referral to the CCS helpline. The first in-person program was piloted in Ottawa in April 2013. A mixed methods evaluation approach was adopted using quantitative data to measure participants' progress in quitting, as well as qualitative information to gain a better understanding of processes, facilitators and barriers to successful promotion and implementation of the Run to Quit program.

Effects on Smoking Behaviour and Physical Activity:

1. 14.3% of participants reported no smoking, not even a puff, in the 30 days at the end of the programme; 14.3% achieved 8-week continuous abstinence and 50% had not smoked in the 7 days before the first follow-up assessment. The respective intention-to-treat quit rates among participants were as follows: 8-week continuous abstinence – 8.3%, 30-day point prevalence – 8.3% and 7-day point prevalence – 29%.
2. At six month follow-up, these rates improved. 28.6% of participants reported no smoking, not even a puff, in the 30 days at six months; 21.4% achieved 8-week continuous abstinence and 50% had not smoked in the 7 days before the final assessment. The respective intention-to-treat quit rates among participants were as follows: 8-week continuous abstinence – 12.5%, 30-day point prevalence – 16.7% and 7-day point prevalence – 29%.
3. There was a reduction in number of cigarettes smoked daily among continuing smokers.

4. At baseline, completers reported greater confidence to quit smoking, reported more quit attempts in the past, and were more physically active than those who did not complete the follow up assessment.
5. Descriptive results suggest that individuals reporting no longer smoking at the end of the program had lower nicotine dependency, smoked less cigarettes per day, and had lower BCO values at baseline. Additionally, these individuals were less physically active than those reporting daily or occasional smoking at the end of the programme.
6. Irrespective of smoking outcome, all participants self-reported increased physical activity from baseline. This was sustained at six month follow-up.

Programme Implementation

7. Thirty-four individuals initially registered for the program, and 24 of those attended the first session. Fourteen participants completed the program (42% attrition).
8. 78.6% of the finishing participants reported the programme was very beneficial or beneficial in helping them quit smoking and 85.7% reported it was very beneficial or beneficial in terms of increasing physical activity. Only one participant would not recommend the programme to a friend who wanted to quit smoking.
9. The majority of the sample reported using nicotine replacement therapy during the programme (78.6%). Only two participants reported using the Smokers' Helpline.
10. Participants described the program as beneficial by providing group support to help with smoking cessation and a structured running schedule for increasing physical activity.
10. Further consideration is needed in identifying strategies to reduce dropout and in broadening participant engagement to include less active individuals and greater heterogeneity in educational background. Specific recommendations include:
 - Role clarity and expectations of the Running Room coaches are required regarding explicit smoking cessation support. Further training may be required.

- Participants need to be reminded that smoking relapses are common but are no reason to stop attending Running Room group runs.
- Depending on capacity, having different timing options for runs (e.g., day/time) would be beneficial as would ability to tailor to a wide range of running abilities.
- Fundraising was considered an additional ‘hassle’ that may have served as a distraction from the smoking cessation efforts of the programme.
- Smoker’s Helpline was not actively used by any participants. More active strategies are required to increase engagement.
- Evaluation needs to be integrated more closely into the programme. Programme evaluation would also benefit from monitoring of participant attendance at Running Room group runs.

Methodology

1. Background

Running Room and the Canadian Cancer Society are collaborating in the development and implementation of “Run to Quit”, a novel multiple health behaviour intervention program. Run to Quit is a 10 week program for smokers, grounded in the Running Room’s existing Learn to Run training program. It includes: education, resources and support from Run to Quit coaches and other smokers on how to quit smoking; a running program that teaches participants to run/walk 5 km by the end of 10 weeks; family and friend support through sponsorship for goal attainment and ‘buddy’ participation; and additional support from the Canadian Cancer Society’s Smokers’ Helpline.

This evaluation has adopted a mixed-methods approach, using quantitative data to measure participants’ progress in quitting as well as qualitative data to gain a better understanding of processes, facilitators and barriers to successful promotion, implementation and outcomes of the Run to Quit program.

2. Evaluation Design and Procedures

2.1 Quantitative Approach: One-Group Pretest/Post-test Design

Initially, two streams of the program were offered. The first was an in-person stream, whereby participants came into the store on a weekly basis for educational sessions related to smoking cessation and running training, in addition to up to three weekly organized group runs. The second stream participated online, having access to the educational materials and completing the runs outside of the organized group setting.

Given low response and attrition with the online stream, our evaluation focuses on the in-person program. A one-group pretest/post-test design was used. Participants completed a baseline (intake) assessment on the first day of the 10 week intervention, and a follow-up assessment on the final day. Additionally, an exit survey was administered at 6 months after the baseline.

Figure 1 describes progress of the Run to Quit participants through the study. Of the 24 who started the program, 14 completed the end of program follow-up survey (58%), and 9 completed the exit survey at the six month mark (38%).

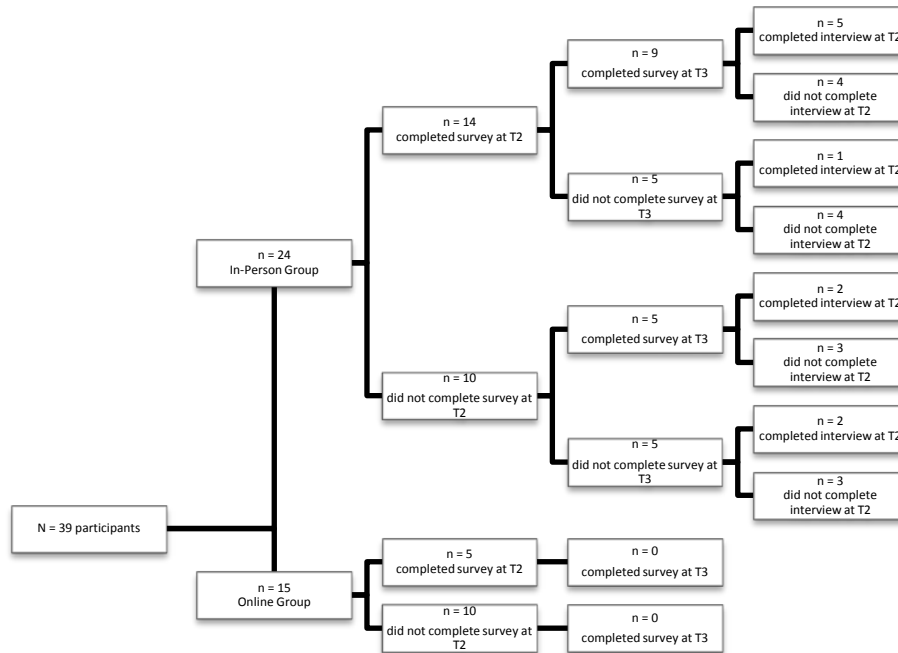


Figure 1. Participant flow of in-person stream of the Run to Quit program.

Baseline (Intake) Assessment

The baseline (intake survey) was administered in Ottawa upon commencement of the program (April 2013) to identify participants’ demographic and smoking related characteristics.

Based on the main predictors of smoking cessation and relapse commonly identified in the literature, we assessed the following at baseline: sources of hearing about the program; demographic characteristics (age, race, gender, education, employment status); number of smokers in the household; current smoking status (using the World Health Organization’s [WHO] smoking status assessment and Questionnaire of Smoking Urges); number of cigarettes smoked daily; level of addiction (using the Fagerström Test for Nicotine Dependence [FTND]); Reasons for Smoking Scale; smoking history (age to start smoking occasionally, daily, years of smoking); quitting history (number of previous attempts to quit, methods used, length of abstinence from smoking);

intention to quit (in next month, in next 6 months); self-efficacy (confidence in quitting); co-morbidities and substance use; and physical activity behaviour (measured with the International Physical Activity Questionnaire).

Smoking status was also measured using a Smokerlyzer ©, which is a device for measuring blood carbon monoxide (CO) concentration.

The “Intervention”

As a group, in-person clinic participants would meet once weekly at the Running Room store on Saturday mornings. A typical session in the 10-week clinic would start off with the Run to Quit coach leading the group through a section of the “One Step at a Time” manual provided by the Canadian Cancer Society (available at <http://www.cancer.ca>), which provided a weekly theme to be discussed. As a group, challenges with cessation would be addressed and encouragement would be exchanged. This educational/discussion component would range from 30 minutes to an hour; this was followed by the running portion of the program, which was approximately 30 minutes in duration.

Throughout the week, support on smoking cessation would also be given to participants via email (approximately 7-10 emails/week). Participants were also invited and encouraged to join additional Wednesday evening and Sunday morning runs leaving from the store. These runs were not exclusively a part of the Run to Quit program, but were open to all Running Room clinic participants as well as members of the general public.

Follow-up Assessment

To assess participants’ progress in quitting smoking, we asked them to complete surveys on the final day of the 10-week program (June 2013). The following key variables were included in the follow-up survey: current smoking status (daily, occasional, non-smoker); length of abstinence; level of addiction (Fagerstrom); occurrence and duration of any relapses since the beginning of the program; reasons for relapse; total time spent as a non-smoker; quit attempts; intentions to quit (in next month, in next 6 months); self-efficacy in quitting or remaining smoke-free; physical activity levels; use of cessation aids

(helpline, NRT etc); perceived usefulness of the different cessation support components included in the program; and perceived benefits of the program.

As with baseline, smoking status was also measured using a Smokerlyzer ©.

Measures of Abstinence

To assess continuous abstinence and 7-day point prevalence abstinence (PPA), participants completed smoking status questions and provided CO samples at both baseline and follow-up. For the present study, participants were considered to have 7-day PPA if they had not had a puff in the last 7 days and had a CO level of <10 ppm at follow-up. Participants were considered to have continuous abstinence if they had not had a puff for 8 weeks and had a CO level of <10 ppm at follow-up. The program is 10 weeks, but a two week “grace period” was allowed for some participants to set a quit date within the first two weeks of starting the program. The Fagerström Test for Nicotine Dependence (FTND) was also administered to gauge nicotine dependence levels at baseline and week 10.

Quantitative Data Analysis

Descriptive statistics were used to describe the demographics of participants and address questions related to accrual and retention rates, and program satisfaction. Descriptive analyses also reported participant quit outcomes, changes in smoking behaviour (if still smokers) and addiction, and physical activity levels. An intention-to-treat (ITT) approach was applied when calculating participants’ quit outcomes. Participants who are included in the analysis will be counted as smokers if their smoking status could not be determined at follow-up. Furthermore, some inferential statistics were conducted to examine differences between groups (e.g., dropouts versus maintainers).

2.2 Qualitative Approach: Interviews with Key Informants (in-person program)

Qualitative interviews were conducted (June-July 2013) to collect more in-depth information regarding what worked well and what might be improved about the program, including contextual considerations related to this pilot. Semi-structured phone interviews were conducted with the Run to Quit coach and administrators to learn about the process of program implementation. Interviews were also conducted with participants of the program who completed or dropped out, for feedback about the program itself.

The coach and administrators were interviewed to learn about: the adequacy of training to deliver cessation support; the use of cessation strategies and techniques in training sessions; what changes in smokers' behaviour they observed as a result of the program; any challenges faced, and what could be done to further improve the program.

We asked all participants of the in-person clinic to participate in an interview. Participants were interviewed to learn about their experience of the program, how it helped their cessation attempts, and what could be done to further improve the program.

Qualitative Data Analysis

Each of the interviews was audio taped and transcribed. Thematic analysis as outlined by Braun and Clarke (2006) was used to identify, name, categorize, and describe emergent phenomena. Throughout this coding process, a constant comparative method (Glaser & Strauss, 1967) was used to ensure that identified phenomena were compared to all others and grouped in terms of broader themes regarding concepts such as acceptability, satisfaction, barriers, and facilitators.

Results

1. Initial Effects of the Run to Quit Program on Smokers' Quitting Behaviour and Physical Activities

1.1 Baseline Characteristics

Participants who started the program were predominantly female (63%), middle aged (54%), and at least university educated (67%). Baseline characteristics of participants who did not complete the first follow-up and those who did are presented in Table 1.

Variable		Did not complete follow-up (n=10)	Completed Follow-up (n=14)
Smoking Status			
	Daily	8	10
	Occasional	2	4
	Former	0	0
Gender			
	Female	6	9
	Male	4	5
Age			
	30-44	5	4
	45-59	4	9
	60+	1	1
Education			
	Secondary school	2	1
	College	2	3
	University	5	5
	Graduate school	1	5
BCO level		11.8 (10)	10.57 (8)
# cigarettes/day		15.9 (8)	17.4 (9.1)
Time to first cigarette (mins)			
	<5	4	4
	6-30	3	6
	31-60	2	1
	>60	1	2
Age of first cigarette (years)		15.8 (3.7)	14.9 (3.7)
# quit attempts		4.4 (2.5)	13.1 (17.8)
Intention to quit next 30 days			
	Yes	10	14
	No	0	0
mConfidence to quit smoking		5	6.5
FTND		4.6	4.6

(Table continued on next page)

mDays of vigorous PA (in a week)	1.2 (1.7)	1.5 (2.1)
mDays of moderate PA (in a week)	2.3 (1.8)	1.9 (2.1)
mMET-minutes/week	1189.7 (1018)	1572 (2262)

Table 1: Baseline characteristics of Run to Quit program participants.

In comparing completers of the end of program assessment, non-parametric tests did not identify any significant differences between completers and dropouts. However, completers at baseline did report greater confidence to quit smoking, reported more quit attempts in the past, and were more physically active than those who did not complete the follow up assessment.

1.2 Quit Outcomes

Quit outcomes are shown in Table 2 and are presented for two samples of participants: Those who completed the follow up assessment and the total sample of participants who started the program. Among the participants who completed the follow-up assessment, 14% reported no smoking since the start of the program. The intention to treat quit rate was 8.3%. Half of the sample reported not smoking in the last seven days before the follow-up assessment.

Quit Outcome	Completed Follow Up (n=14)		Intention to Treat Analysis (n=24)	
8 week continuous abstinence	2	14.3%	2	8.3%
30 day point prevalence	2	14.3%	2	8.3%
7 day point prevalence	7	50%	7	29%

Table 2: Smoking cessation outcomes of Run to Quit participants.

1.3. Changes in participants' smoking behaviour and physical activity

Table 3 presents changes in smoking behaviour and physical activity of the participants. Although not statistically significant, there was a reduction in objectively measured breath carbon monoxide (BCO) levels at the end of the program, and a reduction in self-reported cigarettes smoked daily. Alongside an increase in the number of days spent doing moderate or vigorous physical activity and an increase in weekly energy expenditure, there was a reduction in nicotine dependence.

Comparisons were also made between individuals reporting daily or occasional smoking and those that reported no longer smoking (see Table 4). There was a significant difference in BCO levels between the two groups. Notably, there were no

differences between groups in terms of physical activity behaviour. Irrespective of smoking outcome, all participants reported increased physical activity from baseline.

	Baseline (n = 14)	End-of-Program (n = 14)
Current smoking status		
Daily	10 (71.4%)	6 (42.9%)
Occasional	2 (14.3%)	1 (7.1%)
Not smoking	2 (14.3%)	7 (50%)
<i>m</i> CPD (daily only)	17.4 (9.1)	12.6 (8.1)
<i>m</i> BCO level	10.6 (8.0)	8.33 (8.2)
<i>m</i> F ² TND	4.6 (3.1)	3.8 (2.3)
Quitting intention (next 30 days)		
Yes	11 (78.6%)	6 (42.9%)
No	1 (7.1%)	1 (7.1%)
Not smoking	2 (14.3%)	7 (50%)
<i>m</i> Confidence level	6.82 (2.2)	6.9 (2.6)
Missing	-	-
<i>m</i> Days of vigorous PA (in a week)	1.5 (2.1)	3 (1.2)
Missing	-	-
<i>m</i> Days of moderate PA (in a week)	1.9 (2.1)	3.29 (2.6)
Missing	-	-
<i>m</i> MET-minutes/week	1572.38 (2262.8)	2387.4 (1762.6)

Table 3: Changes in smoking and physical activity behaviour.

	Daily or Occasional (n=7)	No Longer Smoking (n=7)
<i>m</i> CPD (daily only)	15 (7.1)	0
<i>m</i> BCO level	16.2 (6.8)	2.7 (1.6)*
<i>m</i> F ² TND	4 (3.1)	3.6 (1.1)
<i>m</i> Confidence level	6.4 (3)	7.3 (2.5)
Missing	-	-
<i>m</i> Days of vigorous PA (in a week)	3.1 (1.5)	2.9 (1.1)
Missing	-	-
<i>m</i> Days of moderate PA (in a week)	2.9 (2.7)	3.7 (2.6)
Missing	-	-
<i>m</i> MET-minutes/week	2434.1 (1449.7)	2340.5 (2150.5)

**p* < .01

Table 4: Daily or occasional smokers versus non-smokers.

1.4 Predictors of Smoking Status

Analyses also examined potential predictors of change in smoking status. There were no significant differences between groups on baseline variables (using binary logistic regression and independent samples T-tests). However, descriptive results (see Table 5) suggest that individuals reporting no longer smoking at the end of the program had lower nicotine dependency, smoked less cigarettes per day, and had lower BCO values at baseline. Additionally, these individuals were less physically active than those reporting daily or occasional smoking at the end of the program.

Variable		No longer smoking (n=7)	Daily or Occasional (n=7)
Gender			
	Female	4	5
	Male	3	2
Age			
	30-44	2	2
	45-59	5	4
	60+	0	1
Education			
	Secondary school	0	1
	College	3	0
	University	1	4
	Graduate school	3	2
BCO level		9.1 (3.4)	13.9 (9.1)
#cigarettes/day		11.8 (7)	23 (7.7)
Time to first cigarette (mins)			
	<5	1	3
	6-30	4	2
	31-60	0	1
	>60	0	1
Age of first cigarette (years)		13.14 (2.3)	16.7 (4.1)
# Quit attempts		5.4 (3.4)	20.1 (23.2)
Intention to quit next 30 days			
	Yes	5	6
	No	0	1
Confidence to quit smoking		6.9 (2.5)	6.2 (1.7)
FTND		3.3 (2.6)	6 (3)
MET-minutes/week		1045 (1197.7)	2099.75 (3001.8)

Table 5: Predictors of smoking status.

1.5 Participant appraisal of the Program

Participants (n=14) strongly endorsed the program. 78.6% of the participants felt the program was very beneficial or beneficial in helping them quit smoking and 85.7% said it was very beneficial or beneficial in terms of increasing physical activity.

Do you plan on joining Running Room for future group runs?	
Yes on a weekly basis	5 (35.7%)
Yes, occasionally	6 (42.9%)
No	3 (21.4%)
Since starting the program, have you used any of the following methods in an attempt to stop smoking?	
Self-help booklet	8 (57.2%)
Nicotine Replacement Therapy	11 (78.6%)
Pharmacological aids (Zyban, Champix, bupropion)	2 (14.3%)
Smoker's Helpline	2 (14.3%)
Professional counselling	2 (14.3%)
How helpful did you find CCS's OSAAT booklet?	
Very helpful	2 (14.3%)
Helpful	6 (42.9%)
Not helpful	1 (7.1%)
Did not use	5 (35.7%)
How satisfied were you with the registration process for the program?	
Very satisfied	7 (50%)
Satisfied	6 (42.9%)
How helpful did you find the running coach?	
Very helpful	12 (85.7%)
Helpful	1 (7.1%)
Overall, how beneficial has the program being to you in terms of quitting smoking?	
Very beneficial	5 (35.7%)
Beneficial	6 (42.9%)
Not beneficial	3 (21.4%)
Overall, how beneficial has the program being to you in terms of increasing physical activity?	
Very beneficial	7 (50%)
Beneficial	5 (35.7%)
Not beneficial	2 (14.2%)
If your friend wanted to stop smoking, would you recommend the programme to him/her?	
Yes, definitely	6 (46.2%)
Yes, I think so	7 (53.8%)
Missing	1 (7.1%)

Table 6: Participant appraisal of the program.

1.6 Six Month Assessment

Six months after baseline, participants were invited to complete a final survey. This survey focused on smoking behaviour and physical activity. Quit outcomes are shown in Table 6 and are presented for two samples of participants: Those who completed the follow up assessment and the total sample of participants who started the program. Among the participants who completed this final assessment, 21.4% reported no smoking in the previous eight weeks. The intention to quit rate was 12.5%. Two participants had remained quit since the beginning of the program. Half of the sample reported not smoking in the last seven days before the follow-up assessment.

Quit Outcome	Completed Second Follow Up (n=14)		Intention to Treat Analysis (n=24)	
8 week continuous abstinence	3	21.4%	3	12.5%
30 day point prevalence	4	28.6%	4	16.7%
7 day point prevalence	7	50%	7	29%

Table 7: Quit outcomes for Run to Quit participants.

	Baseline (n=14)	Second Follow-Up (n=14)
Number of cigarettes/day	17.4 (9.1)	14.2 (3.8)
<i>m</i> Confidence level	6.54 (2.1)	6.3 (3.1)
Missing	-	-
<i>m</i> Days of vigorous PA (in a week)	1.5 (2.1)	3 (1.2)
Missing	-	-
<i>m</i> Days of moderate PA (in a week)	1.9 (2.1)	1.5 (1.9)
Missing	-	-
MET-minutes/week	1492.6 (1268.5)	2070.6 (2119.5)

Table 8: Interaction between smoking and physical activity levels.

Although not statistically significant, there was an increase in self-reported weekly energy expenditure. Four participants reported that they still participated in Running Room group runs either occasionally (n=2) or weekly (n=2).

2. Feedback on the Run to Quit Program

Assessment of the Run to Quit program implementation is based on the qualitative data derived through coach, administrator and participant interviews. Participant interviews include both program “completers” (n=6) and “non-completers” (n=4). The interview data is supplemented by baseline and follow-up survey data. The overall focus of this section is on the processes, facilitators and barriers to:

- 1) Program promotion;
- 2) Logistic considerations of the program in practice; and
- 3) Perceived efficacy of the program for attaining smoking cessation goals.

2.1 Promotion of Run to Quit

A press release for the Run to Quit program was initiated by Running Room and the Canadian Cancer Society in January 2013 for the program commencing in April 2013. This included advertisements through both organizations’ websites and e-newsletters, as well as television, radio and community advertisements. In addition, a large sign advertising the Run to Quit program was located outside of the Running Room store where the clinic took place. A majority of participants in the in-person (clinic) stream indicated that they learned about the program through word of mouth.

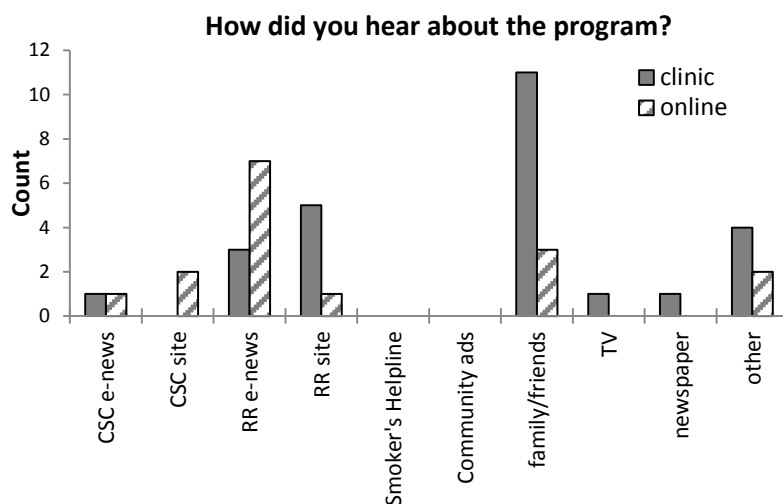


Figure 2. Sources of information through which participants learned about Run to Quit, from baseline survey data.

The group of participants attracted to this program proved diverse, ranging widely in their running abilities and smoking status. Participants perceived the program as attractive because of the idea of having group support. There may be some intimidation for smokers to join the program, and some admitted trying to quit smoking in advance of beginning the program.

It was suggested by some that more aggressive marketing should be done beyond the Running Room and Canadian Cancer Society, in order to generate greater visibility for program promotion in the media.

2.2. Considerations of Run to Quit in Practice

There are a number of considerations when it comes to successfully carrying out the program, including appropriate external and internal supports, resources, and practicalities such as scheduling and appropriateness of the program structure. Participant satisfaction with the program and challenges faced are also vital to consider. These are explored below.

Supports for program implementation

External supports

It was reported that there was constant and consistent communication between the two partner organizations (Running Room and the Canadian Cancer Society) to ensure smooth operation of the program. Although this was a well-suited partnership with a high level of credibility, there was an identified need for a runner who is also an expert on smoking cessation to contribute to coaching the program. The Run to Quit coach was a past smoker, which participants saw as highly important; however, upon taking on the role as clinic coach, she had initially been under the impression that an external representative from the Canadian Cancer Society would provide the smoking cessation education piece. This required an adjustment of expectations on the part of the coach.

Smoker's Helpline was discussed with the participants during sessions, but was only reported to have been utilized by two participants.

Internal supports

Other staff members, in addition to the coach, were present at most of the sessions and contributed to group discussions. Additionally, they also provided motivation and peer support for the coach and participants.

Resources

For coaches

Overall, the training for the program coach was perceived to be satisfactory. However, during this pilot trial of the program, there were still many uncertainties as to how the program should be run. The program guide was an excellent resource but wasn't used in the first couple of weeks of the program due to unawareness of its availability.

Thus, it is suggested that a hard-copy of the training document be provided ahead of time to be followed during webinar training, thus familiarizing coaches with the document in advance of the program.

For participants

An educational manual entitled “One Step at a Time” (available at <http://www.cancer.ca>) was provided for all participants by the Canadian Cancer Society. This manual was generally well-received by participants and was the main reference on smoking cessation for the first half of the program, after which point in time the content had all been covered. The coach sought an additional resource for guiding sessions following completion of the “One Step at a Time” manual (Allen Carr’s “Easy Way to Quit Smoking”).

It was suggested that there should be a reduction in curriculum, as the sessions often went over time in order to include all the material. However, considering the “One Step at a Time” manual was completed within the first five weeks of the program, it is logical to assume that the material could be divided more evenly across the weeks to assuage this concern.

Scheduling

It was suggested by some participants that there should be a change in when the program is delivered, potentially on a weeknight instead of a weekend morning, or earlier in the morning so as not to take up so much of the weekend day. There already is a set run with Running Room for Sunday mornings, and as such, having a clinic on Saturday morning was perceived as some to be poorly scheduled.

There were also suggestions by some participants of having the program start during the winter months. As one participant explained, spring and the onset of warmer weather poses particular challenges to attempting to quit smoking:

“They could start it at a different time...that’s why I think a lot of people dropped out. A lot of people didn’t show up afterwards is because they started going out to concerts and bars and patios and they started smoking again and they said ‘oh forget it’. But if...it was January, February, and March well you’re not going out you know? That was like, once I got by two and a half three months, you know the craving dropped substantially from thing so it’s easier to control than when you go out.”

Appropriateness of program structure

Due to the varying levels of fitness within the group, the coach adjusted her own running plans to accommodate and walk with participants who were not as active. As one participant explained:

“There were huge, huge differences in the level of fitness of the people there and she was perpetually dashing back and forth between the top people and the bottom people. And good for her, she did a great job, but there just wasn’t enough of her to go around.”

Related to this, some participants felt that the program should be more tailored based on an individual’s smoking and fitness level, rather than combining all participants into a single group. As one participant lamented:

“I didn’t find it as motivating because there weren’t a lot of people who were on the same level as me. So maybe in the future...I don’t know if the program’s going to be geared more towards ‘okay well how much of a smoker are you, what’s your athletic ability’ because it was just kind of a “mish-mash” of all different people and in that sense I struggled a little bit with that.”

One suggestion was to create a “Walk to Quit” program to accommodate these varying levels of fitness.

While participating in the ‘Run to Quit’ program, a majority of participants were simultaneously using the Nicorette gum as an aid. The coach would also lead the group in discussions about smoking cessation aids and the proper way of using them. One participant felt that there should be a professional to speak to them about smoking cessation aids, beyond what was discussed as peers in the group.

Another participant felt that there should be an embedded buddy system to help with group cohesion. Yet another suggested that informing participants of the program agenda further in advance would be advantageous in terms of structuring personal goals (e.g. knowing further in advance that Week 3 is “quit week”).

Participant satisfaction with the program

Everyone who was actively involved with the program claimed to have enjoyed it, and also reported feeling more physically fit as a result of their engagement with the program. As mentioned in the discussion of the survey data, 78.6% of the participants reported the program was very beneficial or beneficial in helping them quit smoking and 85.7% reported it was very beneficial or beneficial in terms of increasing physical activity.

Overall, all the participants found the coach to be supportive and helpful for their cessation needs. They appreciated that she was an ex-smoker and felt that they could identify with her, and she with them:

“I think it would be very, very difficult... [and] really, really unproductive to have a group leader who was not an ex-smoker. I think it’s vital to have one.”

On reasons for not completing the program

Almost all the participants who did not complete the program did so due to unexpected health-related issues that prevented them from running. Additionally, some also commented that the date and time did not work well with their schedules.

Overall, most participants who did not complete the program still felt it was a positive experience. As one participant shared:

“I’m definitely interested in the program. The program was great. I was definitely motivated, and I thought that, the little bit that I did do, it was a really good combination of actually doing the stuff, the education...and support network; I thought it was fantastic...I think it’s the kind of program

that's going to work for a lot of people...you know it was fairly comprehensive and it had a whole bunch of different elements all put together, and I think that's the only way that sort of thing works."

However, one participant was unsatisfied with the program and described it to be not for her:

"Well for me I, I was in the wrong thing. I should've gone to the 'Learn to Run' maybe. I felt like it wasn't organized, and it's because it their first time... it wasn't for me. The running wasn't for me."

One individual has taken what was learnt from the sessions attended and attempted quitting on her own:

"I just found that running itself gave me the extra motivation...now that I've kind of committed to running, if I go for a run, it's like if someone offers you a cigarette or something, 'oh well I've just done this positive thing for my body so why would I want to counteract that?"

Furthermore, despite not completing the program, most of these participants still reported that they had been able to reduce their smoking.

Challenges and potential improvements to the program

Program Attrition

Attrition rate of this program was higher than other programs, e.g., Learn to Run. 34 individuals initially registered for the program, and 24 of those attended the first session. Mid-program, there were around 17 participants, and 14 participants completed the program (total attrition of 10).

It was believed that this could be due to participants having relapsed and not feeling comfortable returning to the group. Additionally, since the group was diverse with its fitness level, it was also probable that participants who were less active felt intimidated and did not continue with the program. Furthermore, quitting smoking is a private experience for many, and some participants were uncomfortable or unwilling to share their experience and knowledge with others.

Fundraising

Being funded by the Canadian Cancer Society, which is a charitable organization, requests were made of program participants to contribute to fundraising efforts to support continued work. Both staff and participants were uncomfortable with the

fundraising as they were already spending money on cessation support and running equipment. It was also perceived as a distraction from the smoking cessation efforts of the program. It was suggested that fundraising should be left as an option which individuals can feel good about, rather than being made to feel that it was an obligation or expectation.

2.3 Program efficacy for attaining smoking cessation goals

All participants reported feeling more physically fit as a result of their engagement with the program. It was felt by many participants that the 10 week program was an insufficient timeframe to quit smoking, given that enrollment in the program was not a timeline, but rather, a “*step to success*”. Reported progress on smoking cessation goals, by both program completers and those who did not complete the full 10 weeks, is described below.

Due to the diversity of the group, there were participants in both extremes. There were individuals who had already quit smoking and joined the program to increase their commitment and there were also individuals who relapsed three times in 10 weeks. However, there was reported progress with every case – if an individual did not quit smoking, he/she claimed to have reduced their smoking frequency because of the program. As one participant stated:

“I don’t think I would have been successful without the program.”

Most participants attributed the success of the program to the environment and group support:

“It was a very supportive environment, yeah that was helpful.”

“It was [helpful because] you meet people that are in the same situation and also, it makes you come and actually do the exercise...other people found help with other people in the group and talked with each other...you get to talk more and get...some of the tricks, and when you’re trying to quit smoking anything, anything you can do to help you is beneficial.”

“There were a couple of times where I had a few slip-ups but I found just committing myself to that goal or being involved in the running group was extras motivation to kind of put me back on the right track.”

One participant was already abstinent at the start of the program and remarked its role in cessation maintenance:

“So it kind of gave me the extra boost then too, to help stop smoking during the summer...when the nice weather came. So that’s when I thought there would be lots of problems and it actually really helped out.”

Participants who have not yet quit stated the added benefit of running when they are trying to quit smoking:

“The jogging is now implanted in me and I know I will quit as I now have the tool to jog and notice how hard it is to breathe and I know I will quit.”

“Combining a running and quitting program is a really good look at how your lungs respond to the added demand of running while being a smoker. As I gradually reduced the number of cigarettes I was smoking I gained immediate positive results in how I felt when running.”

Conclusions

The Run to Quit program is an example of a novel multiple health behaviour intervention. There was evidence of modest success in terms of smoking cessation, reduced consumption of cigarettes, and increases in physical activity at the end of the program which were sustained at six months. The program was very acceptable to the participants who completed the evaluation. The majority reported the program to be beneficial both for quitting smoking and becoming more physically active.

Participants were satisfied with the program. Interviews with participants who completed the program were also consistent in highlighting the positive experiences of engaging in the program. Participants described the program as beneficial by providing group support to help with smoking cessation and a structured running schedule for increasing physical activity.

Findings from the current pilot study can be compared to results reported in the evaluation of the Quit & Get Fit (QGF) program which was a pilot initiative of the Ontario Ministry of Health Promotion implemented through the Ontario Lung Association (OLA) in partnership with GoodLife Fitness Centres Inc. (GL). People who registered for QGF received complimentary personal training sessions (2 training sessions per week x 6 weeks) with a specially trained GL personal trainer. The trainers were provided with information, strategies and techniques to support participants' quit attempts. Findings for 7 day point prevalence were similar between studies (50% versus 53.4%). Thirty day point prevalence was greater in the QGF program (44.3% versus 14.3%). Six week continuous abstinence in QGF was 34.1%. Eight week continuous abstinence in Run to Quit was 14.3%. These comparisons were at the end of treatment and it is important to note that smoking status in the QGF evaluation was ascertained only by self-report. For Run to Quit, quit rates had improved by six months. For example, eight week continuous abstinence improved to 21.4%. This is encouraging given research suggesting that most relapses (about 70%) occur within 3 months of initial cessation (Fiore et al., 2000).

However, attrition was high at 42% in the Run to Quit program. This compares to 29% in the QGF program. Notably, completers of the program were more physically active at baseline which might suggest some volunteer bias. The Run to Quit program is likely more attractive to those individuals already engaged in some physical

activity. Further consideration is needed in identifying strategies to reduce dropout and in broadening participant engagement to include less active individuals and greater heterogeneity in educational background. Specific recommendations include:

- Role clarity and expectations of the Running Room coaches are required regarding explicit smoking cessation support. Further training may be required.
- Participants need to be reminded that smoking relapses are common but are no reason to stop attending Running Room group runs.
- Depending on capacity, having different timing options for runs (e.g., day/time) would be beneficial as would ability to tailor to a wide range of running abilities.
- Fundraising was considered an additional ‘hassle’ that may have served as a distraction from the smoking cessation efforts of the program.
- Smoker’s Helpline was not actively used by any participants. More active strategies are required to increase engagement.
- Evaluation needs to be integrated more closely into the program. Program evaluation would also benefit from monitoring of participant attendance at Running Room group runs.

Limitations of the Evaluation

This evaluation was a pre-experimental design. In the absence of a control group, it is not possible to confidently conclude that the program contributed to the outcomes reported. Additionally, most participants reported using other cessation aids such as NRT. It is and will remain difficult to tease apart which components of the program are related to successful outcomes.

Due to the small sample size ($n = 24$), the power to detect statistically significant effects of the intervention was low. Due to low numbers, it was not possible to evaluate the online program.

Physical activity was not objectively assessed and self-reports of physical activity are subject to bias. Additionally, smoking status at the six month follow-up was ascertained through self-report.

Ideally, future evaluations might consider comparisons with other interventions (e.g., Smoker’s Helpline) without the Running Room component, incorporate objective

measures of physical activity such as accelerometry, and track the fidelity of the intervention.

Summary

Preliminary results suggest that the program is feasible yet further consideration is needed in identifying strategies to reduce dropout and in recruiting those individuals most likely to benefit from such a program that seeks to promote multiple health behaviour change. Strengthening smoking cessation support embedded within the program is also likely needed.

References

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Appendix A – Information Sheet and Consent



UNIVERSITY OF TORONTO
FACULTY OF KINESIOLOGY & PHYSICAL EDUCATION



Canadian
Cancer
Society

Société
canadienne
du cancer



Study Title: Run to Quit

Investigators: Dr. Guy Faulkner (Faculty of Kinesiology and Physical Education, U of T)
John Atkinson (Canadian Cancer Society)

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Think carefully in deciding whether or not you wish to take part.

What is the purpose of this study?

We are examining whether the Run to Quit programme helps participants quit smoking.

What will you be asked to do in the study?

As part of your participation in the 'Run to Quit' program at the Running Room, you will be asked to complete several questionnaires at various time points. In addition to demographics, these questionnaires will assess your smoking status and nicotine dependence level. You will complete the questionnaires in-person at the start and also at the end of the program. At these times, you will also have your breath analyzed by a Smokerlyzer which detects breath CO level to identify smoking status and abstinence. The assessments will take approximately 15 minutes to complete at each session.

At six-months following the end of the program, we will call you to get a brief update on your physical activity levels and smoking status. This call will take no more than 5 minutes of your time.

At the end of the program, you may also be selected to participate in a more in-depth interview over the phone outlining your experience with the program. This call will take no more than 20 minutes of your time.

Altogether, the total time commitment for completing the evaluation of the program will be 1-1.5 hours

Can I take part in this study?

The assessments of the program (in-person questionnaires, breath CO level detection via Smokerlyzer, phone interviews at follow-ups) are part of your participation in the 'Run to Quit' program.

Do I have to take part?

Taking part in the 'Run to Quit' program is voluntary. It is up to you to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time and without justifying your decision and with no disadvantage to yourself.

Are there any risks involved?

Participation in the 'Run to Quit' program is low-risk, primarily involving initial physical discomfort endured with engaging in any form of physical activity. However, you will be properly trained on a weekly basis by the Running Room to achieve your fitness goal at the end of the 10-week program. Participation in the evaluation part of the program via the assessments is very low-risk, primarily involving answering questionnaires and having your breath analyzed.

What are the benefits of my involvement?

The benefit of your involvement in 'Run to Quit' is to help you achieve your fitness and smoking cessation goals. There is no direct benefit for your participation in the evaluation of the program. However, the assessments will help with program development, so that in the future, we can offer greater health promotion strategies that suit someone such as yourself.

Will information obtained in the study be confidential?

All the information you provide to the researcher will be kept in the strictest confidence. You will not be identified in any documents relating to the research. No information obtained during the study will be discussed with anyone outside of the research team. You will not be identified in any report or publication.

Who is funding the research?

This project is funded by the Canadian Cancer Society

Questions?

If you have any questions about the assessments you will complete for 'Run to Quit', you can contact AGNES HSIN (416-946-0262, agnes.hsin@utoronto.ca) or GUY FAULKNER (416 -9467949, guy.faulkner@utoronto.ca). You can also contact the Office of Research Ethics at ethics.review@utoronto.ca or 416-946-3273, if you have any questions about your rights as a participant.

Thank you for considering taking part in the program

A.1 Participant Consent Form

Study Title: **Run to Quit**

Investigators: Dr. Guy Faulkner (Faculty of Physical Education and Health, U of T)
John Atkinson (Canadian Cancer Society)

The nature and the purpose of the study to be undertaken have been explained to me. I understand that I will be asked to complete baseline questionnaires at the start of the program assessing my demographics and smoking status. At this time, I will also have my breath analyzed with a Smokerlyzer, which detects breath carbon monoxide level. Then at the end of the program, I will again complete questionnaires related to my smoking status and abstinence and have my breath carbon monoxide level analyzed again.

At the six months follow-up, I will participate in a brief phone interview to answer questions regarding my smoking status and abstinence.

I acknowledge that at the completion of the 'Run to Quit' program, I may be selected to participate in a more in-depth phone interview answering questions about my experiences and perception of the program.

I understand that I may withdraw from the program at any time without justifying my decision and without any penalty to myself. The answers I give are confidential.

As part of continuing review of the research, I also understand that my study records may be assessed on behalf of the Research Ethics Board. A person from the research ethics team may contact me (if my contact information is available) to ask questions about the research study and my consent to participate. The person assessing my file or contacting me must maintain my confidentiality to the extent permitted by law. Additionally, I am being asked if would like to receive future invitations to participate in research studies examining exercise and smoking behavior. I can decline this request and still participate in the current study. If I accept, I am under no obligation to participate in any future study.

I have read the information sheet on the above study. I understand what will be required if I take part in the study.

Signature of Participant..... **Date**.....

(Name in BLOCK LETTERS).....

E-mail:

Phone number:

The following section is entirely **OPTIONAL** and has no bearing on your participation in this study:
I consent to having my contact information added to a future study recruitment list: **YES** **NO**

A.2 Release and Indemnity Waiver

Release and indemnity:

I know that participating in physical fitness events is a potentially hazardous activity. I agree not to participate unless I am medically able and properly prepared. I should not participate without my physician's approval. I agree to abide by any decision of an event official concerning my ability to safely participate. I assume any and all risks associated with the event; including but not limited to, falls, contact with other persons or objects, the effects of weather, traffic and course conditions. As a condition of my entering this event, I, for myself, any accompanying minors, and anyone entitled to act on my behalf, waive and release Running Room Sports Inc., any associated or related entities, their directors, officers, employees, agents, representatives, sponsors, volunteers, and organizers (herein collectively called "Event Organizers"), from present and future claims and all liabilities of any kind, known or unknown, arising out of my participation in this event or related activities, even though such claim or liability may arise out of negligence or fault on the part of the Event Organizers. I agree that the Event Organizers shall not be liable for any personal injury, death or property loss, and I release the Event Organizers and waive all claims with respect thereto. In the event my registration fees are paid, I agree to be bound by the provisions of this waiver. I grant permission to Event Organizers to use or authorize others to use any photographs, motion pictures, or any other record of my participation in this event or related activities without remuneration. Applications for minors shall be accepted only with a parent's signature and should be signed by the minor.

I hereby acknowledge having read this Release and Waiver and I understand and accept its terms.

Clinics are non-refundable

Running Room Canada Inc. is committed to respecting the personal privacy of our customers. All personal information held or collected by Running Room Canada Inc. is protected.

If you have any questions about the protection of your personal information, please contact us at: mailprivacy@runningroom.com or by postal mail to Running Room Canada Inc., 9750 - 47 Avenue, Edmonton, Alberta, Canada, T6E 5P3. To view our privacy policy visit web site: www.runningroom.com.

Appendix B – Baseline Questionnaires

International Physical Activity Questionnaire

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

1. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ **days per week**

No vigorous physical activities



Skip to question 3

2. How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

3. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

No moderate physical activities



Skip to question 5

4. How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ **days per week**

No walking



Skip to question 7

6. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Demographics and Smoking Assessment

PLEASE CHECK OR FILL IN THE BLANK FOR EACH QUESTION

1. I am:
 - MALE
 - FEMALE

2. How old are you? _____

3. What nationality/ethnic group do you primarily identify with:
 - Aboriginal
 - African American
 - Caucasian
 - East Asian
 - Latin American
 - Middle Eastern
 - More than one race
 - South Asian
 - Other (please specify) _____
 - Prefer not to answer

4. What is your highest level of education completed? (please select only **one** response)
 - Elementary school (grades 1-8)
 - Secondary school (grades 9-12)
 - College
 - University
 - Graduate School
 - Prefer not to answer

5. What is your current employment status? (please select only **one** response)
 - Employed full-time
 - Employed part-time
 - Student full-time
 - Student part-time
 - At home with children
 - Without paid employment
 - Not applicable (please explain) _____

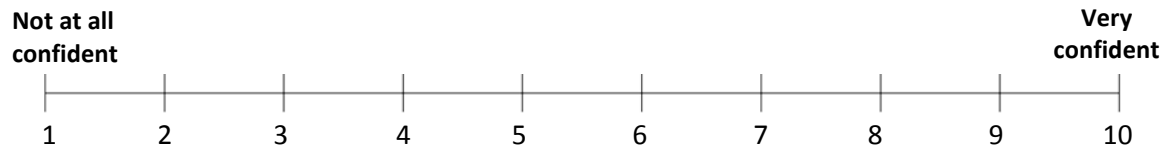
6. How many years have you been smoking? _____

7. At what age did you smoke your first cigarette? _____

8. What is your *main* reason for smoking (please select only **one** response)?
- To control body weight
 - Stress, need to relax or to calm down
 - Boredom
 - Addiction/habit
 - Lack of support or information
 - Social reasons (smoking when going out)
 - It was available
 - No reason. Just felt like it
 - Family or friends smoke
 - Other (please explain) _____
9. Have you *ever* smoked at least 100 cigarettes (approximately one a day for 3-4 months or occasional smoker for a year or about 4-5 packs of cigarettes):
- YES
 - NO
10. Do you *currently* smoke:
- DAILY
If *daily*, on average how many cigarettes do you smoke per day? _____ cigarettes
 - OCCASSIONALLY
If *occasionally*, on average, how often and how many cigarettes do you smoke?
How often: _____/day/week/month
How many: _____cigarettes
11. If you are an occasional smoker, have you ever smoked daily in the past?
- YES
If *yes*, for how long have you smoked daily (months or years?) _____months/years
If *yes*, how long has it been since you last smoked daily? _____days/months/years
 - NO
12. When was the last time you smoked a cigarette, even a puff?
- Less than a week ago
 - One week ago
 - Two weeks ago
 - Three weeks ago
 - One month ago
 - More than a month ago
13. Have you ever tried to quit before?
- YES
If *yes*, how many times have you tried quitting before? _____ times
If *yes*, did you use any cessation aids? YES or NO
If *yes*, which ones: _____
If *yes*, how long were you able to stay abstinent for? _____ days/months/years
 - NO

14. In the past 12 months, how many times have you stopped smoking for at least 24 hours, because you were trying to quit? _____
 Did not try to quit in the past 12 months
15. In the past 12 months, what was the longest period of time you have quit and remained smoke free?
_____ day(s)/week(s)/month(s)
16. Are you *seriously* thinking of quitting smoking?
 YES
 NO (go to **Question 22**)
17. If YES, are you thinking of quitting within the next 6 months?
 YES
 NO
18. If YES, are you thinking of quitting within the next 30 days?
 YES
 NO
19. Have you already set your quit date?
 YES _____ (mm/dd/yy)
 NO
20. What is the *main* reason you plan to quit smoking (please select only **one** response)?
 Reduce disease risk/improve health
 Illness/disability
 Too expensive/cost
 Smoking restrictions
 Reduce others' exposure to second hand smoke
 Pregnancy/breastfeeding
 Reduced need/craving
 Family pressure
 Other, please specify _____
21. Are you currently using any cessation aids, and if so, which ones (check **all** that apply)?
 Self-help book/booklet
 Nicotine replacement therapy (patch, gum, inhaler, or lozenge)
 Pharmacological aids (Zyban, Champix, bupropion)
 Smoker's Helpline
 Counselling by a health professional
 Support from family/friends
 Herbal remedies
 Hypnosis
 Acupuncture
 Laser therapy
 Other (please specify) _____

22. Using a scale of 1 to 10, where 1 means that you are not at all confident and 10 means you are very confident, please tell us how confident are you that you can quit smoking and remain smoke free?



23. Do other members of your household smoke?

YES

If yes, how many members are smokers? _____

NO

24. Are you exposed to indoor tobacco smoke at home?

YES

If yes, for how long is the exposure? _____ minutes OR hours per day

NO

25. Are you exposed to indoor tobacco smoke at work?

YES

If yes, for how long is the exposure? _____ minutes OR hours per day

NO

26. Aside from tobacco, do you consume any other substances regularly (including alcohol)?

YES

If yes, which substances? _____

NO

27. Have you ever been diagnosed with a mental illness condition?

YES

NO

Prefer not to answer

28. If you answered YES to Question 16, which condition(s) have you been diagnosed with?

Anxiety

Bipolar disorder

Depression

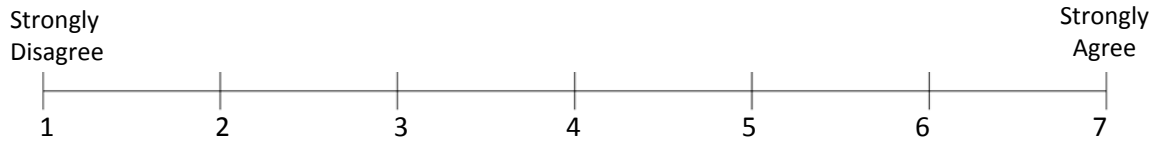
Schizophrenia

Other _____

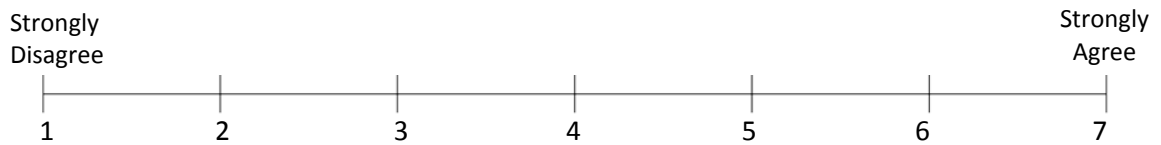
Questionnaire of Smoking Urges

For the following ten statements, please circle a number from 1 to 7 corresponding with how you feel where 1 = strongly disagree and 7 = strongly agree

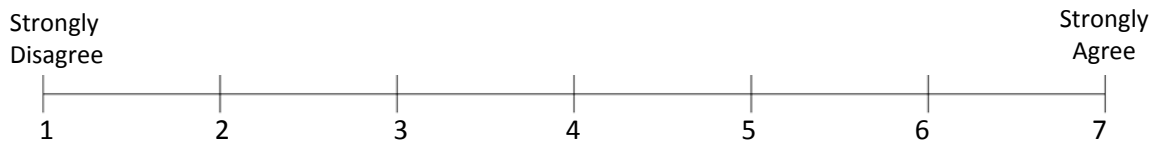
1. I have a desire for a cigarette right now



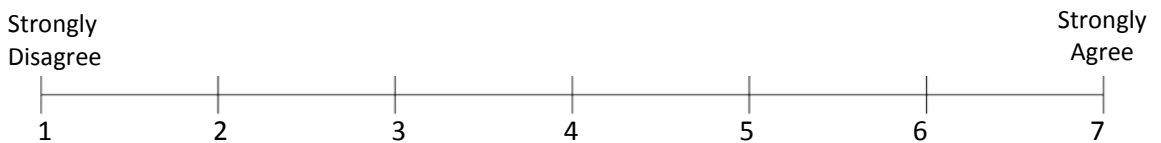
2. Nothing would be better than smoking a cigarette right now



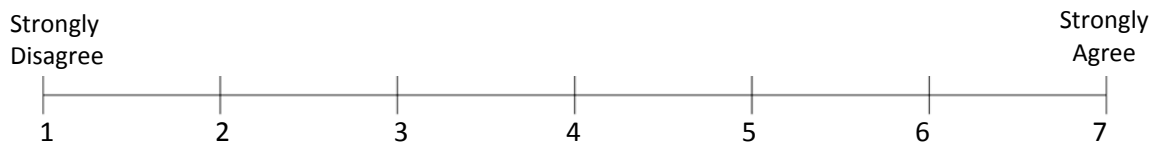
3. If it were possible I would probably smoke now



4. I could control things better right now if I could smoke



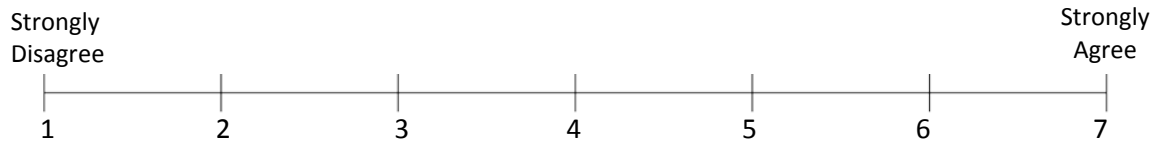
5. All I want right now is a cigarette



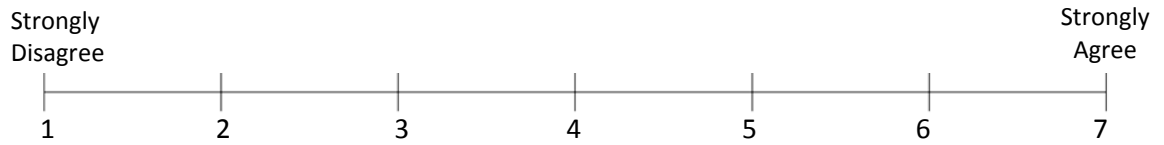
6. I have an urge for a cigarette



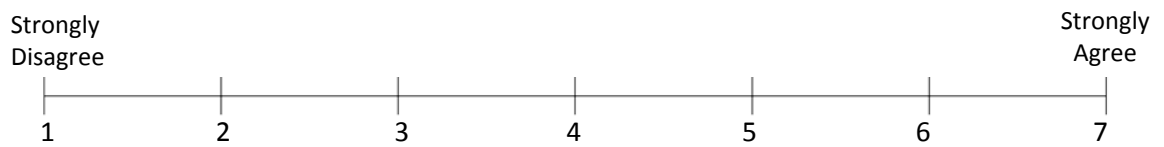
7. A cigarette would taste good now



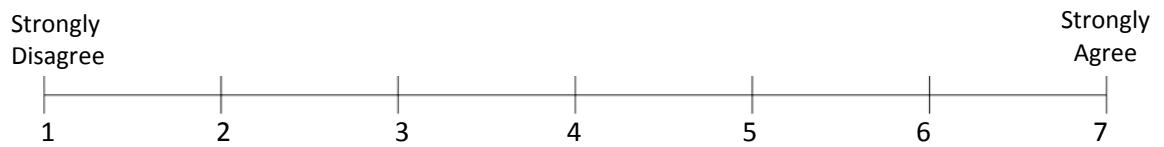
8. I would do almost anything for a cigarette now



9. Smoking would make me less depressed



10. I am going to smoke as soon as possible



Fagerström Test for Nicotine Dependence

1. How soon after you wake up do you smoke your first cigarette?
 - Within 5 minutes
 - 6-30 minutes
 - 30 minutes or more

2. Do you find it difficult to stop smoking in no smoking areas?
 - NO
 - YES

3. Which cigarette would you most hate to give up?
 - The first one in the morning
 - Any other

4. How many cigarettes a day do you usually smoke?
Please write the number in the box and circle one response below
 - 10 or less
 - 11 to 20
 - 21 to 30
 - 31 or more

5. Do you smoke more frequently during the first hours after waking than during the rest of the day?
 - YES
 - NO

6. Do you smoke if you are so ill that you are in bed most of the day?
 - YES
 - NO

Appendix C – End of Program (10-Weeks) Questionnaires

International Physical Activity Questionnaire

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

5. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ **days per week**

No vigorous physical activities



Skip to question 3

6. How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

7. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

No moderate physical activities



Skip to question 5

8. How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ **days per week**

No walking **→** *Skip to question 7*

8. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

9. During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Smoking Status and Program Assessment

29. Do you currently smoke:
- DAILY (go to **Question 3**)
If *daily*, on average how many cigarettes do you smoke per day? _____ cigarettes
 - OCCASSIONALLY
If *occasionally*, on average, how often and how many cigarettes do you smoke?
How often: _____/day/week/month
How many: _____cigarettes
 - NO LONGER SMOKING (go to **Question 3**)
30. If you are an occasional smoker, were you a daily smoker at the beginning of the program?
- YES
If *yes*, for how long have you smoked daily (months or years?) _____months/years
If *yes*, how long has it been since you last smoked daily? _____days/months/years
 - NO
31. In the past 8 weeks, was there ever a time when you smoked at least one puff per day for 7 consecutive days?
- YES
 - NO
32. Have you smoked, even a puff, in the **past 8 weeks**?
- YES
 - NO (go to **Question 7**)
33. Have you smoked, even a puff, in the **last 30 days**?
- YES
 - NO (go to **Question 7**)
34. Have you smoked, even a puff, in the **last 7 days**?
- YES
 - NO
35. On which date did you have your last cigarette, even a puff? If you had a cigarette today, please also indicate the time (mm/dd/yy) _____ time _____
36. As a result of the 'Run to Quit' program, did you cut down on the amount you smoked?
- YES
 - NO
37. In the past 8 weeks, how many times have you stopped smoking for at least 24 hours, because you were trying to quit? _____
- Did not try to quit

38. In the past 8 weeks, what was the longest period of time you have quit and remained smoke free?
 _____ day(s)/week(s)/month(s)

39. Have you had any occurrences of relapse since starting the program?

YES

If yes, what caused you to begin smoking again? _____

NO

40. How many quit attempts have you had since the start of the program? _____

41. Since starting the program, have you used any of the following methods in an attempt to stop smoking (check **all** that apply)? Beside each one that you use, please indicate if they are helpful or not

Self-help book/booklet _____

Nicotine replacement therapy (patch, gum, inhaler, or lozenge) _____

Pharmacological aids (Zyban, Champix, bupropion) _____

Smoker's Helpline _____

Counselling by a health professional _____

Support from family/friends _____

Herbal remedies _____

Hypnosis _____

Acupuncture _____

Laser therapy _____

Other (please specify) _____

42. If you are still smoking, do you intend to quit smoking within the next 6 months?

YES

NO

No longer smoking

43. If you are still smoking, do you intend to quit smoking within the next 30 days?

YES

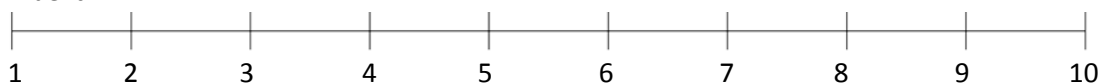
NO

No longer smoking

44. Using a scale of 1 to 10, where 1 means that you are not at all confident and 10 means you are very confident, please tell us how confident are you that you can quit smoking and remain smoke free or remain smoke free if you have already quit?

**Not at all
confident**

**Very
confident**



45. Are you currently using the Smoker's Helpline, provided as part of the 'Run to Quit' program?
- YES
 - NO
46. If you are using the Smoker's Helpline, how helpful do you find it to be for your goal of smoking cessation?
- Very helpful
 - Somewhat helpful
 - Neither helpful nor useless
 - Somewhat useless
 - Very useless
 - Not using the helpline
47. How helpful did you find the 'Run to Quit' coaches?
- Very helpful
 - Somewhat helpful
 - Neither helpful nor useless
 - Somewhat useless
 - Very useless
48. In general, how helpful did you find the 'Run to Quit' program?
- Very helpful
 - Somewhat helpful
 - Neither helpful nor useless
 - Somewhat useless
 - Very useless
49. Overall, how satisfied are you with the quit support from the coach?
- Very satisfied
 - Satisfied
 - Neither satisfied nor dissatisfied
 - Dissatisfied
 - Very dissatisfied
50. Overall, how beneficial has the 'Run to Quit' program been to you in terms of **quitting smoking**?
- Very beneficial
 - Beneficial
 - Not beneficial
 - Not at all beneficial
 - Don't know

51. Please explain your answer for how beneficial you found the 'Run to Quit' program in terms of **quitting smoking**

52. Overall, how beneficial has the 'Run to Quit' program been to you in terms of **increasing physical activity**?

- Very beneficial
- Beneficial
- Not beneficial
- Not at all beneficial
- Don't know

53. Please explain your answer for how beneficial you found the 'Run to Quit' program in terms of **increasing physical activity**

54. If a friend wanted to stop smoking, would you recommend the 'Run to Quit' program to him/her?

- Yes, definitely
- Yes, I think so
- No, I don't think so
- No, definitely not

55. Overall, what did you like about program?

56. Overall, what did you **not** like about the program?

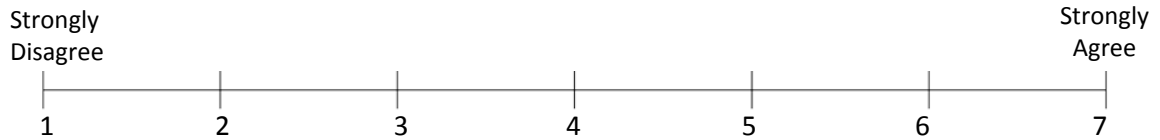
57. What suggestions or recommendations do you have for the program?

58. Any last comments?

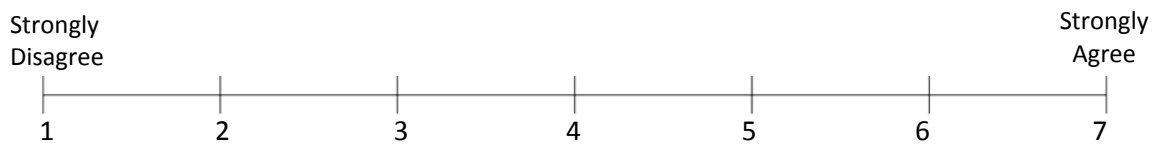
Questionnaire of Smoking Urges

For the following ten statements, please circle a number from 1 to 7 corresponding with how you feel where 1 = strongly disagree and 7 = strongly agree

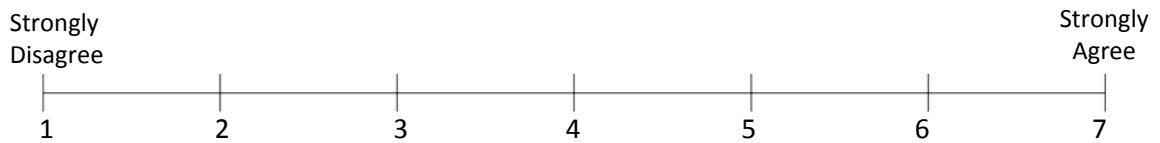
11. I have a desire for a cigarette right now



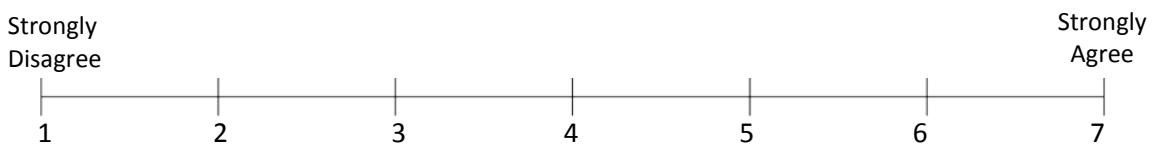
12. Nothing would be better than smoking a cigarette right now



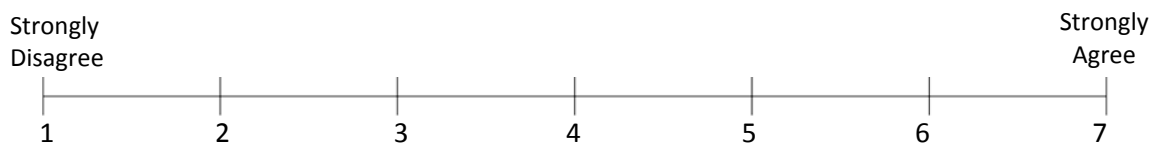
13. If it were possible I would probably smoke now



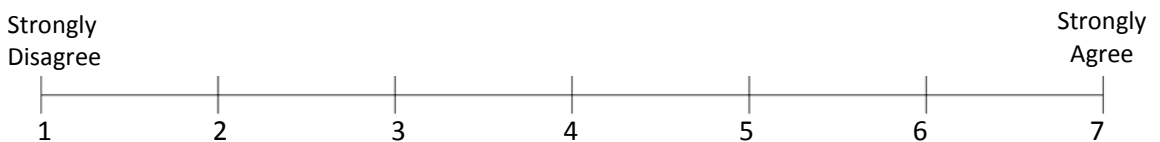
14. I could control things better right now if I could smoke



15. All I want right now is a cigarette



16. I have an urge for a cigarette



17. A cigarette would taste good now



18. I would do almost anything for a cigarette now



19. Smoking would make me less depressed



20. I am going to smoke as soon as possible



Fagerström Test for Nicotine Dependence

7. How soon after you wake up do you smoke your first cigarette?
- Within 5 minutes
 - 6-30 minutes
 - 30 minutes or more
8. Do you find it difficult to stop smoking in no smoking areas?
- NO
 - YES
9. Which cigarette would you most hate to give up?
- The first one in the morning
 - Any other
10. How many cigarettes a day do you usually smoke?
- Please write the number in the box and circle one response below
- 10 or less
 - 11 to 20
 - 21 to 30
 - 31 or more
11. Do you smoke more frequently during the first hours after waking than during the rest of the day?
- YES
 - NO
12. Do you smoke if you are so ill that you are in bed most of the day?
- YES
 - NO

Appendix D – Brief Interview (six months follow-up)

The following questionnaires will be conducted over the phone. They are to get an idea of participants' physical activity level and smoking status at the six months follow-up.

International Physical Activity Questionnaire

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

9. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ **days per week**

No vigorous physical activities



Skip to question 3

10. How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

11. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

No moderate physical activities



Skip to question 5

12. How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know

Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ **days per week**

No walking → **Skip to question 7**

10. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

11. During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Smoking Status and Program Assessment

59. Do you currently smoke:
- DAILY (go to **Question 3**)
If *daily*, on average how many cigarettes do you smoke per day? _____ cigarettes
- OCCASSIONALLY
If *occasionally*, on average, how often and how many cigarettes do you smoke?
How often: _____/day/week/month
How many: _____cigarettes
- NO LONGER SMOKING (go to **Question 3**)
60. If you are an occasional smoker now, were you a daily smoker at the **end** of the program?
- YES
If *yes*, for how long have you smoked daily (months or years?) _____months/years
If *yes*, how long has it been since you last smoked daily? _____days/months/years
- NO
61. In the past 6 months, was there ever a time when you smoked at least one puff per day for 7 consecutive days?
- YES
 NO
62. Have you smoked, even a puff, in the **past 6 months**?
- YES
 NO (go to **Question 7**)
63. On which date did you have your last cigarette, even a puff? (mm/dd/yy) _____
64. In the past 6 months, how many times have you stopped smoking for at least 24 hours, because you were trying to quit? _____
 Did not try to quit
65. In the past 6 months, what was the longest period of time you have quit and remained smoke free?
_____ day(s)/week(s)/month(s)
66. Have you had any occurrences of relapse since starting the program?
- YES
If *yes*, what caused you to begin smoking again? _____
- NO
67. How many quit attempts have you had since the start of the program? _____
68. Since starting the program, have you used any of the following methods in an attempt to stop smoking (check **all** that apply)? Beside each one that you use, please indicate if they are helpful or not
- Self-help book/booklet _____

- Nicotine replacement therapy (patch, gum, inhaler, or lozenge) _____
- Pharmacological aids (Zyban, Champix, bupropion) _____
- Smoker's Helpline _____
- Counselling by a health professional _____
- Support from family/friends _____
- Herbal remedies _____
- Hypnosis _____
- Acupuncture _____
- Laser therapy _____
- Other (please specify) _____

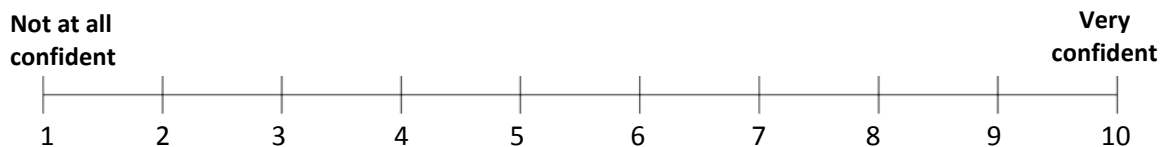
69. If you are still smoking, do you intend to quit smoking within the next 6 months?

- YES
- NO
- No longer smoking

70. If you are still smoking, do you intend to quit smoking within the next 30 days?

- YES
- NO
- No longer smoking

71. Using a scale of 1 to 10, where 1 means that you are not at all confident and 10 means you are very confident, please tell us how confident are you that you can quit smoking and remain smoke free or remain smoke free if you have already quit?



Fagerström Test for Nicotine Dependence

13. How soon after you wake up do you smoke your first cigarette?
- Within 5 minutes
 - 6-30 minutes
 - 30 minutes or more
14. Do you find it difficult to stop smoking in no smoking areas?
- NO
 - YES
15. Which cigarette would you most hate to give up?
- The first one in the morning
 - Any other
16. How many cigarettes a day do you usually smoke?
- Please write the number in the box and circle one response below
- 10 or less
 - 11 to 20
 - 21 to 30
 - 31 or more
17. Do you smoke more frequently during the first hours after waking than during the rest of the day?
- YES
 - NO
18. Do you smoke if you are so ill that you are in bed most of the day?
- YES
 - NO

Appendix E – Semi-Structured Interview with Coaches

The following script is for a semi-structured interview to be conducted over-the-phone with Running Room Coaches. They include the main questions that will be asked. The interviewer will probe into the given answers for more depth and explanation as required.

1. How would you define your main role for the program?
2. Do you think you were provided with sufficient information, knowledge, and training to start supporting the participants with their efforts to quit smoking?
 - What other information would you have liked to see?
 - What could have been done to help you feel more prepared if you didn't think the training was adequate?
3. Did you receive coaching and mentoring support during the program implementation?
4. How did you find the use of cessation strategies and techniques that were used in the sessions?
 - What would you change about them?
5. What support did you provide to your clients during the sessions? Describe a typical session at the beginning, middle, and end of the program.
6. Which techniques or strategies from what you learned did you find the most helpful for smoking cessation? Which of them were the least helpful? Why? How about for increasing physical activity?
7. Did you refer your clients to other quit supports and did you follow-up with them on the use of other quit supports?
8. What did you observe in changes in clients' behaviours as a result of the program? At mid-program? At end of program? What factors do you think contributed to the changes in their behaviour?
9. Did you encounter any challenges and barriers when providing support to participants? How were these challenges addressed? What happened as a result? What lessons were learned from these experiences?
10. What would you say was your biggest challenge?
11. How has working with 'Run to Quit' participants affected the usual Running Room programs? Did you have to adjust training plans because you were working with smokers willing to quit?
12. Did you encounter a situation when your clients did not actually make a quit attempt? How did you handle this situation? How about clients who did not make an attempt at increasing fitness?
13. Given your experience, to what extent is the length of the program (10 weeks) adequate to generate a change in smokers' behaviour and their physical activities?

14. Overall, which type(s) of smokers do you think are likely to succeed in quitting smoking by participating in fitness activities?
15. What aspects of the program would you change? What kind of modifications would you suggest and how do you think this will help the program?
16. Overall, what has your experience been like working with Canadian Cancer Society on this 'Run to Quit' program?
17. Do you have any additional comments or suggestions about the program you would like to share?

Appendix F – Semi-Structured Interview with Participants

At the end of the program, participants will be categorized into four groups with the first three groups completing the program: (1) participants who report continuous abstinence (smoke free for 8 weeks or more), (2) participants who report smoking reduction, and (3) participants who did not experience any smoking reduction, and (4) participants who did not complete the program. Six individuals will be selected from each group to complete to semi-structured interviews, for a total of 24 participants for this assessment.

The following script is for a semi-structured interview to be conducted over-the-phone with selected participants. They include the main questions that will be asked. The interviewer will probe into the given answers for more depth and explanation as required.

F.1 – Script for participants who completed the program

1. Can you describe your experience with the program?
2. How did you find your coaches? Were they helpful with your goal of smoking cessation? How about your fitness goals?
3. What kind of support and cessation aids did you use? Which one did you find to be the most helpful? Which one was the least helpful? Why?
4. Overall, did you find the program helpful in your smoking cessation attempts? Why or why not?
5. What would you like to see done in the future to improve the program?

F.2 – Script for participants who did not complete the program

1. What was your main reason for not completing the program?
2. Can you describe your experience with the program?
3. How did you find your coaches? Were they helpful with your goal of smoking cessation? How about your fitness goals?
4. After you stopped coming to the sessions, did you try to quit or increase your fitness by yourself? How did you do that?
5. What kind of support and cessation aids did you use? Which one did you find to be the most helpful? Which one was the least helpful? Why?
6. Overall, did you find the program helpful in your smoking cessation attempts? Why or why not?
7. What would you like to see done in the future to improve the program or to help you complete it?