Kick the Habit

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The effectiveness of a Consumer Centred Tobacco Management (CCTM) approach in enabling mental health consumers to reduce or quit smoking – a pilot study.

Report on findings

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Suggested Citation

Acknowledgments

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Executive Summary

The aim of this pilot study was to test a new way of helping smokers with severe and persistent mental illness to reduce their smoking or quit altogether. Neami National conducted the pilot study in consultation and partnership with a research team from the Telethon Kids Institute in Western Australia. The pilot study was also a test of the feasibility of conducting smoking intervention research in the context of a community mental health setting, and with multiple sites. Five Neami sites trialled a Consumer Centred Tobacco Management approach (badged as *Kick the Habit*) whilst a further three Neami sites delivering business-as-usual smoking cessation practice were selected for comparison with KTH sites. KTH included provision of two weeks of free Nicotine Replacement Therapy (NRT; patches only) at the time of recruitment into the study, followed by ongoing NRT patch prescription by General Practitioners (GPs) via the Pharmaceutical Benefits Scheme (PBS). At the time of the study NRT patches were the only government subsidised NRT product available to Australian smokers via the PBS. The pilot study was conducted between October 2016 (commencement of staff training) and January 2018 (completion of all research follow-ups).

Participants in the study were followed up at 1-month, 3-months and 6-months post-recruitment and interviewed using a standard questionnaire. There were 34 participants in the KTH group and 30 in the control group with sufficient follow-up data to support evaluation of the intervention. Most of those in the KTH group were at a 'moderate' or 'high' level of dependence on the Fagerstrom Dependency Scale (Heatherton et al., 1991) at recruitment, compared to just over half of those in the control group. Results indicate a reduction in number of cigarettes smoked daily and a reduction in dependency levels in the KTH group over the follow-up period. This corresponded with a self-reported reduction in tobacco use and reduced weekly expenditure on tobacco – these reductions were less evident in the control group. Very few in either group quit smoking altogether. Participants in KTH increased their knowledge of NRT and confidence in talking to their GP about their smoking.

The KTH intervention was designed around the use of NRT patches for several reasons: their listing on the PBS made them affordable on prescription from a GP (In 2018, $37.70 for a four-week course; $6.10 with a concession card for a 4-week course; to a maximum of 12 weeks per year), alternative NRT options remained expensive, and participants mostly relied on Disability Support Pensions for their income. In keeping with the study design, NRT patches were the most commonly used form of NRT by KTH participants. Alternatives to NRT patches such as mists, inhalers, gum, lozenges and e-cigarettes were not part of the study design but still featured in the quit strategies of many participants. Use of additional and alternative nicotine delivery systems to assist quitting, other than NRT patches prescribed by GPs, was at the personal expense of KTH participants. As such, not all participants could afford or wanted to supplement their prescribed NRT patches with other NRT products. This may have influenced their ability to cut-down or quit and highlights a gap in Australian

health policy in supporting other forms of NRT, especially for economically disadvantaged smokers needing additional help to quit smoking.

There were many challenges in implementation of the pilot study. This included the need to replace one of the intervention sites due to management changes and cessation of services for three other sites due to transition to a different NGO provider part way through the period. Feedback from Neami staff and project research assistants identified several consumer-centred barriers (e.g. they were in crisis/hospital or homeless; not ready to quit; focused on bigger problems; stressed; their existing medication regime was prohibitive) and staff-related barriers (e.g. negative attitudes, low motivation, limited capacity within existing workload, and lack of belief in the program) to recruitment of participants into KTH and the research study. For some sites the delay between training and program start resulted in loss of knowledge and confidence in 'starting the conversation' whilst for others there was not enough time. Staff consistently expressed a desire for more practical training. Most consumers would have liked an extended period of free access to NRT and a greater variety of NRT as patches were not always effective, and alternatives were costly. Contacting consumers to complete follow-up questionnaires was sometimes difficult whilst answering the questions was challenging for some consumers especially if they weren't doing so well with their mental health in general.

Despite the challenges, it appeared that confidence and support for the program grew once staff had a good understanding of what the KTH intervention and research study involved, and why something new was needed to help Neami clients with smoking cessation. There were many positive comments from consumers and members of staff about the benefits of participating in KTH and encouraging signs for incorporation into business-as-usual practice within Neami services over time. Providing greater access to various forms of NRT on the PBS would be highly beneficial for Neami clients and for all smokers wanting to quit or reduce their tobacco use, especially those managing mental illness and facing financial hardship.

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Introduction

This report describes the process and outcomes of a pilot study undertaken by Neami National in consultation and partnership with a research team from the Telethon Kids Institute (TKI), at the University of Western Australia (UWA) to test a new way of helping smokers with severe and persistent mental illness to reduce their smoking or quit altogether. The aim of this pilot was to test if the Consumer Centred Tobacco Management (CCTM) Program, badged as *Kick the Habit* was more effective than business-as-usual methods at helping mental health consumers to reduce their nicotine dependence or quit smoking. The study was also a test of the feasibility of conducting the research within a community mental health settings across multiple sites with sufficient scientific rigour to make conclusions about the effectiveness of the intervention.

Neami National (est. 1986) is a community mental health service supporting people aged 16 years and over living with mental illness to improve their health, live independently and pursue a life based on their own strengths, values and goals. The Neami team are trained mental health professionals, social workers and social scientists who see over 9,000 consumers per year across their national network of around 50 sites. They have approximately 1000 staff in total. Neami operate four sub-acute residential facilities for people going through particularly difficult periods with their mental health, and over 40 community outreach sites where consumers are visited in their own homes by Neami support workers. Sites are both urban and rural.

Neami have expertise in mental health recovery and a deep understanding of the tobacco dependency that is so prevalent among consumers of their services. Almost 50 per cent of community outreach consumers smoke, rising to around 70 per cent of sub-acute consumers, and many rely on welfare support as their main source of income, mostly from Disability Support Pension (DSP). As a result, many consumers of Neami services also experience financial hardship alongside managing their mental illness. For context, the 2017 DSP rates for adults aged over 21 years were: $826.20/fortnight – Single, or $1,246.60/fortnight – Couple. Financial issues among those living with severe mental illness are increasingly related to tobacco addiction; a pack-a-day habit now costs around $200/week (half of a single DSP). Commonwealth Government mandated tobacco excise increases of 12.5% p/a until 2020 will only exacerbate this problem, making a pack-a-day habit worth almost $300 per week (Thomas, 2016). Business-as-usual cessation plans have not been effective in this population, despite public health campaigns and rising cigarette prices curbing smoking in the general population.

The TKI research team has many years' experience in the conduct of surveys, trials and programme evaluations with adult and child participants in Australia. The TKI team have also written a suite of peer reviewed scientific papers on the relationship between smoking and mental health (Lawrence

et al., 2009; 2010a; 2010b; 2011a; 2011b; 2011c; Zubrick et al., 2012). Neami recognised the need to try something different to the standard available cessation tools when addressing tobacco addiction among people with mental illness. Neami staff were aware of the publications on smoking and mental health produced by the TKI team and made contact in April 2015 wishing to collaborate on designing and trialling a new intervention. TKI assisted with several iterations of the study design, and part sponsored the pilot study. Ethical approval was obtained from Neami's Research and Evaluation Committee and UWA's Human Research Ethics Committee in October 2016.

The pilot involved five sites where consumers received the Kick the Habit (KTH) intervention and three control sites where consumers receive business-as-usual care (one sub-acute facility each in intervention and control groups). The intervention lasted for up to 28 days at sub-acute facilities and about six weeks at outreach sites (continued follow-up was site dependent). Data was collected from consumers in the study at recruitment, and at 1-month, 3-month and 6-month time points after recruitment. The pilot was conducted between October 2016 with data collection completed by February 2018. This report documents the tobacco-reduction, wellbeing and knowledge outcomes of the study using both quantitative and qualitative data from participants, and reflections on the process by Neami support workers and research staff. It finishes with a discussion and recommendations for future refinement of the approach for expansion to other Neami sites.

Background

Mental health and smoking

Smoking rates among the general population have shown a steady decline over the past decade, with 14.5% of Australian's smoking in 2014-15 (Australian Bureau of Statistics, 2015). In contrast smoking rates have remained high amongst those living with mental illness. In 2007, the rate of smoking in adults was double amongst those with any mental disorder compared to no mental disorder (36.2 and 18.8% respectively); smokers with mental disorders represented 32% of smokers (over 1 million people) in Australia (Lawrence et al., 2009).   Smoking rates are even higher among people living with psychotic illnesses such as schizophrenia – up to 70% (Cooper et al., 2012; Greenhalgh et al., 2018). The high mortality rates associated with cardiovascular disease (CVD) among this population is not surprising in light of such high rates of tobacco consumption. People with psychiatric disorders suffer reduced life expectancy by an average of 16 years for males and 12 years for females; much of this is due to physical health conditions like smoking-related illness (Lawrence et al., 2013).

The negative health effects of smoking in humans were first confirmed in three landmark papers on Smoking and Carcinoma of the Lung by Richard Doll and Austin Bradford Hill published from 1950 – 1954 (Doll and Hill, 1950; 1952; 1954). Since then governments around the world have gradually introduced measures to dissuade and discourage people from either taking up smoking or continuing to smoke. Australian Government public health initiatives to reduce smoking prevalence in the population began in earnest from 1973 when packet warnings were introduced ("Warning— Smoking is a health hazard"), followed in 1975 by the banning of tobacco advertising on television. At this time male smoking rates were over 40% and females around 30% (Woodward et al., 1984). The intervening years have seen a range of additional anti-smoking public health strategies employed, such as television and print advertising campaigns, further regulation of advertising channels for tobacco, point of sale restrictions, rising tobacco excise, and the world-first introduction of plain packaging with graphic warnings from 2013. Combined, these actions have seen Australian adult smoking rates fall to 17% for males and 12% for females, and around 14.5% overall, in 2014-15 (Australian Bureau of Statistics, 2015).

Research shows that people suffering common mental health problems are just as motivated to quit smoking as people without mental illness (Siru, 2009), but 30-plus years of increases in tobacco excise, tobacco control laws and public health messaging around tobacco-related harm have not resulted in mass cessation among this group in the same way it has for the general population. In addition to the increased health risk it also puts them under increasing financial strain, especially if their main income is from welfare payments.

Neami provides services to individuals who experience severe and enduring mental illness, many of whom smoke. Smokers with severe and enduring mental illness typically smoke more heavily (Cooper et al., 2012) and intensely (Tidey et al., 2005) than smokers from the general population, have higher nicotine dependence, spend a substantial amount of their income on tobacco (Steinberg et al., 2004) which has implications for housing and nutrition, and experience complex psychosocial barriers and risk factors around smoking (Ragg & Ahmed, 2008). The 'self-medication' hypothesis has been strongly debated (Ragg & Ahmed, 2008), however, nicotine does stimulate the production of a number of neurotransmitters, producing positive effects of increased arousal and pleasure, mood modulation, learning and memory enhancement, and a temporary reduction in tension and anxiety (Benowitz, 2008). Although the positive effects of smoking are transient and outweighed by the long term health effects of smoking, the role of nicotine in relieving some of the negative symptoms of psychotic illness such as lethargy, apathy and lack of motivation, improving working memory and sensory gating (blocking out extraneous stimuli), and reducing some of the side effects of medication (Barr et al., 2008; Matthews et al., 2011) is a powerful motivator for some consumers to continue smoking, and hence, provides a substantial barrier for support workers to engage consumers in smoking cessation.

In recent years the levying of ever higher rates of tobacco excise has become one of the Australian Government's main weapons in the war on tobacco use. The latest policy sees increases of 12.5% per annum from 2013 until 2020, with the average 20-pack set to cost $40 by 2020; a pack-a-day impost of $280 per week, or almost $15,000 per year (Thomas, 2016). This equates to roughly two-thirds the annual income value of a single-adult Disability Support Pension. While these costs may well deter many people from taking up or continuing smoking, for people suffering mental illness who are also addicted to nicotine the "rational consumer" arguments of behavioural economics that underpin these excise policies don't necessarily hold. Neither wages nor pensions can keep pace with this current round of tobacco price rises, which makes welfare-dependant smokers with mental illness even more vulnerable to poverty related issues. Hence, any action that can help people with mental illness to reduce or quit smoking has implications not only for their health, but increasingly for their financial wellbeing too (Hirono and Smith, 2017).

Targeted smoking cessation interventions in Australia

Tailored smoking cessation support for mental health populations could have a substantial impact on reducing the high rates of mortality associated with CVD and improve the management of other physical health conditions frequently observed among those living with mental illness (e.g., diabetes, poor oral health). However, the availability of such interventions in the community is limited, and as this proposal will outline, there is a need for evidence-based practice in the development of tailored smoking cessation approaches.

There are two smoking cessation interventions specifically designed to assist people living with mental illness that have been widely used among mental health and community services in Australia. The first is the Tobacco Free manual (Tobacco and Mental Illness Project, 2012), developed by the Tobacco and Mental Illness Project (TMIP). This project was implemented in South Australia over an 11-year period and provided group-based assistance to smokers living with mental illness. The group sessions involved the following activities: a decisional balance of the likes and dislikes about smoking, planning for triggers, information about nicotine withdrawal and nicotine replacement therapy (NRT), health effects of smoking, coping with negative feelings, and dealing with high risk situations. The program was facilitated by a peer worker, someone living with a mental illness who was also a comfortable ex-smoker, and a mental health worker who usually had a tertiary qualification in Occupational Therapy or Social Work. The second intervention is the SmokeFree kit (SANE Australia, 2009) developed by SANE Australia in consultation with smokers living with mental illness. This program incorporates aspects of motivational interviewing and cognitive behavioural therapy (CBT) to build capacity, coping and social skills, contingency management, and self-efficacy among consumers via a series of simple and interactive activities.

Evaluation of the TMIP (Ashton et al., 2013) revealed that despite high levels of motivation among participants to quit smoking (87.6%), only one quarter of participants available to follow-up had quit smoking by the end of the program. The SmokeFree kit was evaluated as part of the Breath Easy project (Mental Health Coordinating Council & Cancer Council NSW, 2009). This program was implemented by five Non-Government, community mental health services in NSW, and despite high levels of self-reported motivation to quit, and an increased number of quit attempts made by consumers throughout the project, there was no significant reduction in smoking rates. The report also cited no significant reduction in smoking rates from the first survey by consumers available for follow-up at the end of the project but there was an increase in quit attempts (Mental Health Coordinating Council & Cancer Council NSW, 2009). A need for face-to-face support and affordability of NRT were cited as barriers to engaging in the SmokeFree groups. Reasons for not engaging in the TMIP groups focused on physical wellness and the practicalities of attending the group venue (Ashton et al., 2013). Therefore, there are some practical and support factors that must be considered in order to facilitate smoking cessation interventions with consumers of mental health services.

The Pilot Study

Smoking cessation programs at Neami (business-as-usual practices)

Participants at control sites in the pilot study received business-as-usual practices at Neami which are guided by the overarching service delivery model practiced by all staff at Neami - the Collaborative Recovery Model (CRM). The model utilises 'coaching' and 'motivational interviewing' skills to support consumers in making changes that improve recovery and wellbeing. The core processes within the model include attitudes, knowledge and skills pertaining to six domains: 1) Recovery as an Individual Process, 2) Collaboration and Autonomy Support 3) Change Enhancement, 4) Values and Strengths identification, 5) Life Visioning and Goal Setting and 6) Action Planning and Monitoring. Neami staff utilise the principles and therapeutic structure of the CRM model in all their consumer engagement and support practices. The CRM is used to guide conversations about recovery goals – these may include smoking reduction and cessation goals amongst other life goals.

Neami has been offering 'Fresh Start' programs developed by Quit Victoria in Victoria for the past three years. Similar programs have been offered in Queensland, and both NSW and South Australia utilise the SANE SmokeFree kit (SANE Australia, 2009), and Tobacco Free manual (Tobacco and Mental Illness Project, 2012) respectively. 'Fresh Start' has continued to be offered among many Neami services, despite consistently low consumer participation rates (on average three consumers per session). Occasionally, some services have cancelled 'Fresh Start' due to little or no interest from consumers. Feedback from Quit Educators suggest a number of reasons for this, such as consumers not being ready to quit and others not responding well to the session content. Another potential factor underlying the low levels of participation and success with current approaches to smoking cessation centres on optimal use of NRT and physiological factors underlying nicotine addiction among mental health populations.. Some sub-acute sites that do not allow smoking provide a range of free NRT for residents for the duration of their stay.

Consumer Centred Tobacco Management (CCTM) approach – Kick the Habit

Participants at Neami's intervention sites received the Kick the Habit (KTH) intervention which is based on the CCTM approach. This approach is underpinned by the core therapeutic processes of the CRM. Current tailored smoking cessation programs typically involve only those smokers who are motivated to quit. Current approaches are therefore not always successful at meeting people where they are at, and in order for a smoking cessation approach to be consistent with Neami's recovery-oriented practice, such a program must be consumer-focused. A recent commentary by Gillian Gould (2014) outlines a 'patient-centred tobacco management' approach for health professionals that provides an excellent framework for developing our national approach to smoking cessation. Such an approach is in line with Neami's core values by encompassing a holistic focus and encouraging consumer driven decision making around interventions and management of health problems. This approach, which will be defined here as Consumer Centred Tobacco Management (CCTM), has the advantage of engaging all smokers, irrespective of their attitude to quitting or 'motivational stage'. Consumers need not be 'ready' to change nor hold any specific attitudes other than wanting, or at least agreeing to manage their smoking better (Gould, 2014). The CCTM approach also fits well within a harm minimisation framework for tobacco use.

Tobacco harm minimisation refers to any attempt to reduce the physical harm from smoking without complete cessation of tobacco (Beard et al., 2013). Such an approach typically involves the provision of NRT (patches) in conjunction with unrestricted smoking, and serves to reduce both the initial anxiety associated with quitting and also inhalation of toxins (Bittoun et al., 2014). As mentioned earlier, smokers maintain a very accurate level of nicotine in their blood plasma throughout the day. Therefore, by applying an NRT patch, some nicotine is delivered transdermally and some is delivered via cigarette smoking. The topography (number of puffs and depth of inhalation) of smoking changes because less nicotine is required from the cigarette to reach daily peak levels. A more gradual approach to smoking cessation may engage and facilitate smoking cessation among individuals who experience barriers to immediate or sustained abstinence such as people living with mental illness.

Following the Patient Centred Tobacco Management framework outlined by Gould (2014), CCTM involves the following components/principles:

1) Assessment of tobacco consumption and nicotine dependence;

2) Such assessment must take into account consumer's smoking history;

3) An agreed upon tobacco management plan (TMP) must be consumer driven;

4) Prevention and health promotion messages must also be incorporated, for example, addressing other 'lifestyle factors' (e.g., excessive alcohol use);

5) The management of smoking may be a longstanding challenge, requiring flexible solutions, repeated attempts, and as such, a positive longer-term relationship between staff, consumers, and other allied health professionals must be promoted;

6) Resources must be allocated realistically, for example, longer, structured support visits.

Consumers' tobacco management goals may vary along a spectrum from temporary to complete abstinence. There is no need to weigh up the pros and cons of quitting (2014) as CCTM meets consumers where they are at in terms of their tobacco management goals, and Neami staff are well placed to work with consumers around goal setting using existing CRM protocols. Given that best practice in smoking cessation requires the provision of both pharmacological and behavioural support (Stead & Lancaster, 2012), and smoking cessation among sub-populations such as those living with a mental illness require more intensive, and longer term support, it was advised that all consumers were linked in with a suitable General Practitioner (GP) and/ or communication with existing GP or Psychiatrist was undertaken to support their tobacco management. Although NRT is available without prescription, in order to access affordable pharmacotherapies via the PBS (only NRT patches), a prescription is required. As such, a good working relationship between the consumer, GP, Neami staff, and allied health professionals is required for effective CCTM.

Kick the Habit Intervention

There were two main components to the intervention - specialised staff training and working one-to-one with consumers to develop an individually tailored TMP

A) Staff training

All Neami staff receive standard CRM training of three days as part of their roles. Therefore, the KTH-specific training leveraged off that core training of which the coaching and motivational interviewing were an essential part of the skill set required to deliver the KTH Program.

The KTH staff training content included smoking cessation relevant to a mental health setting, behavioural strategies to support smoking cessation, and optimal use of NRT to support consumers of mental health services to manage their smoking. The training included attendance at a 1-2-hour training session, and online training material. It was intended that all staff at each site participate in the training, and this was mostly achieved. At some sites, there was high staff turnover so not all new staff attended the training session. A practice manual was initially developed by a Neami Health Promotions Officer in WA. The approach was based on training received by the Health Promotions

team around NRT as a necessary component of smoking cessation programs by Renee Bittoun. The training and practice manual evolved over time.

Training materials developed were:

- Training Slides
    - Case studies were a key resource in training
    - Information about research process
- KTH 'Program Resource Pack' covering:

    1. Site work flow
    2. Kick the Habit program steps

    Step 1: Start a conversation about smoking and assess nicotine dependence
    Step 2: Introduce KTH and ask if they wish to try the approach
    Step 3: Introduce consumer to research
    Step 4: Develop a Tobacco Management Plan (TMP)
    Step 5: Clarify working alliance
    Step 6: Review, consolidate, celebrate

    2. Nicotine Replacement Therapy (NRT)
    3. Carbon Monoxide Monitoring
    4. Behavioural Strategies

- QUIT brochures, posters and examples of NRT products

    B) One-to-one work with consumers (KTH program steps)

The training outlined six steps for support workers to take in supporting KTH.

Step 1: Start a conversation about smoking and assess nicotine dependence

- The initial conversation about tobacco use can be undertaken during the intake process, while completing needs assessment (CANSAS), or during the Optimal Health Program (OHP), ASSIST, and the Health Prompt. Research indicates that the simple act of starting a conversation, regardless of attitudes towards smoking/quitting, has a positive impact on someone's decision to try and manage their tobacco use.

- Provide some basic education throughout the conversation about the benefits of reducing smoking. Provide information about NRT (optimal use and safety), harm minimisation using NRT, impact of smoking cessation on medication, caffeine and alcohol. This includes discussion of the health effects of smoking, incorporating health promotion education and encouraging healthy behaviours, and discussing the financial implications of smoking.

- Assess consumers' level of nicotine dependence using the Tobacco Dependence Assessment Form adapted from Quit Victoria (Attachment 1) using two questions about time to first cigarette from waking, and the number of cigarettes smoked each day.

Step 2: Introduce KTH and ask if they wish to try the approach

Explain the KTH program to the consumer and ask whether they are interested in participating. The key points that consumers need to know about the program are that:

- It involves individualised support and the use of NRT;

- It is for consumers who want to manage their tobacco use OR quit;

- It engages all consumers who smoke, irrespective of their attitude towards quitting or 'motivational stage';

- It is in line with Neami's recovery oriented practice and meets consumers where they are at;

- It is about having a conversation about smoking;

- It is important to note that NRT will be provided free to anyone participating in KTH for two weeks and is not dependent on participation in the research component of the study;

- Support/encourage the consumer to see their GP to talk about their plans and obtain a script to access NRT patches at a subsidised cost via the Pharmaceutical Benefits Scheme (PBS);

- If the consumer wants to try KTH, it is also important to support consumers to speak with someone who can help to monitor possible interplay with psychiatric medication and smoking. This may be a psychiatrist, a case manager or GP. If someone reduces their nicotine intake, psychiatric medications may need to be adjusted.

Step 3: Introduce consumer to research

- If consumers are interested in engaging in KTH, advise them about the pilot research study and if they are interested, ask for their consent to be contacted by a researcher to learn more about what participation in the study would involve.

- Consumers who give consent to be contacted need tp complete a consent document that includes name and contact information only. Researchers will contact consumers who provide consent to be contacted and provide more information about what the study involves. If not consenting to be part of the research, KTH can be continued with the consumer.

Step 4: Develop a Tobacco Management Plan (TMP)

- Develop a TMP with the consumer using a template to document the outcome of developing the plan (Attachment 2).

- It is important to identify whether the consumer is interested in managing their tobacco use from a harm minimisation perspective only, starting from harm minimisation with the view of ceasing smoking in the very near future, or actively seeking to reduce and stop smoking.

- Harm minimisation: consumer uses NRT patches (or other types of NRT financed by themselves) and continues to smoke.

- Reduce to quit: consumer uses NRT patches (or other types self-financed) and starts to reduce their daily number of cigarettes at their own pace, and ceasing smoking when they were ready.

- Discuss potential strategies that could be used. Provide information about NRT (optimal use and safety), harm minimisation using NRT, and impact of smoking cessation on medication.

- Discuss which behavioural strategies the consumer might like to try. This could be for managing withdrawal or managing cravings. Highlight 'Why' (Why do I want to do this?)

- Use CRM protocols such as MAP to support identifying barriers or who might support the consumer in the success of their tobacco management goals.
- Offer Referral to Quitline Call back service to all consumers interested in managing their tobacco use better.
- Refer consumer to pharmacist to provide two weeks free supply of NRT to consumers.

Step 5: Clarify the working alliance

- Clarify a working alliance with the consumer. This may include where and when you see or speak to them, and who else may be involved. Discuss the approach that the consumer wants to take including how often they would like you to check in.
- Use your own discretion to set appropriate parameters for this according to their own capacity and the arrangements that you have with the consumer.

Step 6: Review, consolidate, celebrate

- Report on side-effects of NRT (if using) and initiate follow-up with a treating health care professional if required. Keep working on identifying triggers and strategies for use in high risk situations and to cope with cravings. Use MAP and CRM tools to plan for relapse prevention.
- Consolidate and celebrate achievements and learnings regardless of progress and outcomes. Continue support with coaching and revising goals if necessary.

The length of time that the consumer received support under KTH was determined on an individual basis taking into account participants' goals and length of time receiving support services by Neami. This differed between sub-acute and outreach sites. The maximum length of time on the Program at the sub-acute site was 4 weeks (total length of stay).

In reality, the length of time that consumers received support under KTH varied considerably. For those outreach sites where funding ceased, Neami support for those clients ceased, although it was possible for the RA to follow-up consumers to complete the questionnaires. For the 12-week period when the RA (who was usually one of the support workers at these sites) was employed, consumers on KTH continued to receive support. After that time and when the research role was centralised, and consolidated to one RA, the level of support for KTH varied and was site/support worker dependent. Anecdotally, levels of follow-up on the TMP and support for KTH dropped off after these 3 months. There was no data collected on the number of contacts/reviews made by the support worker during the period of the study.

Research Design

The KTH protocol and all material for the pilot study were developed by Neami in consultation with the UWA team. The pilot was reviewed and approved by the Neami Research and Evaluation Committee and the UWA ethics committee (Ref: RA/4/1/8437; original approval 25 October 2016).

Study sample (sites)

Kick the Habit sites

It was planned that the study would be conducted across two sub-acute sites and two outreach sites. These four services differed in terms of geographical location, residential capacity, length of stay and type of service delivery (outreach, or residential care). The total number of consumers in contact across any one year at the four KTH sites was approximately 430 persons. Approximately half of these (~215 persons) were current smokers. For this pilot study we anticipated uptake and adherence to KTH would occur for at least 50 per cent of current smokers at Neami sites. Therefore, estimated sample size for persons exposed to and completing the intervention was 110 persons split evenly across participating sub-acute and community outreach sites. A much smaller sample size was ultimately achieved by the pilot study, and the reasons for this under-ascertainment are due partly to site changes during the pilot (as described below) and challenges faced within participating sites that were staff and consumer-related (refer to Sections 7 and 8).

Control Sites

One sub-acute site and two outreach sites were initially selected for comparison. For control sites we expected information on a similar number of consumers to be available for comparison purposes. Control sites were matched as closely as possible on geography, demographic composition, and smoking rates.

Site changes during the pilot

Two new KTH sites were added in early 2017 due to low numbers of smokers at existing sites. One site was removed before the start of the study due to changes in management and staff that meant it was no longer feasible for the site to be involved. Furthermore, changes to funding meant that three Neami sites were taken over by different NGO service providers towards the end of the study period. However, Neami had consent from the new site operators to contact pilot participants to complete the final follow-ups.

Kick the Habit – participating Neami sites

Site	Staff training	Study launch	Data collection
Kick the Habit			
KTH 1	March 2017	March 2017	6 Apr–7 Dec 2017
KTH 2	Oct 2016	Feb 2017	14 Feb–5 Oct 2017
KTH 3	March 2017	March 2017	5 Apr–7 Dec 2017
KTH 4	Aug 2016 – Jan 2017	Feb 2017	28 Feb 2017–8 Jan 2018
KTH 5	Oct 2016	Feb 2017	14 Feb–21 Dec 2017
Control			
Control 1	N/A	Feb 2017	20 Feb–20 Dec 2017
Control 2	N/A	Feb 2017	20 Feb 2017–3 Jan 2018
Control 3	N/A	Jan 2017	1 Feb 2017–3 Jan 2018

Research Assistants (RAs)

A Research Assistant was recruited for each site. In all but one site, the RA was already employed at the site as a support worker. The site RA's assisted with recruitment and data collection for the first three months of the project. They also continued to have their own case load of consumers, including those participating in KTH. After three months the RA roles were consolidated into one role based at Neami Head Office.

Participant recruitment methods

Consumers at KTH sites who agreed to discuss their tobacco use were invited to participate in the KTH program and also invited to participate in the research study. Participation in KTH was not dependent on participation in the research program. Consumers at control sites were invited to participate in the research study under business-as-usual tobacco management. Research participants at the KTH and control sites completed two consent forms – 1) initial agreement to be contacted by the RA, and 2) agreement to participate in the research (Attachment 3: information and consent forms, 6 documents).

KTH sites. As described in the KTH program steps, all consumers at participating sites were asked about their tobacco smoking by their key support worker or intake officer. During discussion about smoking, consumers were asked if they would like to engage in individualised coaching sessions specific to managing their smoking. Workers then advised consumers about KTH and asked if they would be willing to participate. Consumers who were interested in participating in KTH were also

advised about the research study and if they were interested to give their consent to be contacted by the RA. The RA then contacted the consumer and if they were still willing, discussed information about 1) what participation in the study involved, 2) the voluntary nature of study, 3) the right to non-consent or withdrawal of consent at any time, and 4) the confidentiality and privacy process.

Control sites. Consumers at control sites were advised by their key support worker about the research study and asked if they were interested, and if so, gave their consent to be contacted by the RA. The RA then contacted the consumer and gave more information about the study as described above for KTH sites. Staff at control sites did not receive specific training in KTH, and consumers using these sites did not have access to the KTH Program during the pilot study. Each of these sites continued with business-as-usual practices.

Study measures

A set of questionnaires were developed by the Neami research team in consultation with the UWA team. The final content of the questionnaires was partly informed by outcomes from a consumer focus group. All questionnaires were self-report and administered by the RAs either in person or over the phone. The pre-questionnaire was completed once consent had been received to participate in the research with the same content for KTH and control sites. The post- questionnaires were completed at approximately 1-month, 3 months and 6 months after recruitment. Copies of each of the questionnaires are attached (Attachment 4).

- Pre-Tobacco Management Questionnaire (all sites) - at the start of the study collecting basic demographic information and examining consumer's tobacco use using the Fagerstrom Test for Nicotine Dependence (Heatherton et al., 1991), cost of tobacco use, knowledge on tobacco management and basic health and social wellbeing questions.
- Post-Tobacco Management Questionnaire (KTH sites) – included the same questions about tobacco use, cost, knowledge on tobacco management, and health and social wellbeing with additional questions examining what the consumer found useful and what changes had occurred (tobacco use and financial situation).
- Post-Tobacco Management Questionnaire – (control sites) - asking the same questions as the KTH sites with the only additional question on what, if any, tobacco management support the consumer may have received as part of routine service.

Analysis

The effectiveness of KTH was examined by comparing tobacco management outcomes for those in the KTH sites against outcomes for those in the control sites. The primary outcome of interest was a reduction in tobacco use, whilst secondary outcomes were improved wellbeing and knowledge. Due to the small numbers that were eventually recruited in each group (64 participants in total; 34 KTH and 30 control) we have been limited in the types of statistical analysis the data will support.

Therefore, this report is descriptive, and differences between outcomes for the KTH sites and control sites are subjective and not based on statistical testing. Percentages are reported for characteristics at baseline (where an individual represents about 3%), whereas, in the remainder of the report, only raw numbers of participants are reported, as percentages become increasingly unreliable with shrinking sample size.

The report first describes participant characteristics (Section 1), then cessation and tobacco use and dependency outcomes (Sections 2 and 3). Section 4 focuses on cost of tobacco use and financial benefits, whilst Section 5 assesses changes in knowledge and confidence and Section 6 reports on health and wellbeing outcomes. Section 7 summarises qualitative feedback from KTH participants whilst Section 8 provides a summary of feedback on the process from site managers, support workers and research assistants at KTH sites. Section 8 discusses the findings and recommendations for improvement for future expansion of KTH to other Neami sites, or other NGO or government sites. This report is accompanied by a detailed Technical Report for the research component and a brief qualitative report of consumer and staff experiences.

Results

Section 1: Participant Characteristics

Number of participants

The study had 64 participants – 34 in the KTH group and 30 in the control group (Table 1). There were 10 others who were recruited but excluded from the analysis, including seven participants who withdrew from the sub-acute KTH site because despite consenting to participate, they were discharged before the program started. One participant withdrew, and two others were excluded because although they did not withdraw, they had no data collected following recruitment. There were 40 participants from outreach sites and 24 from sub-acute sites.

Table 1: Number of participants per site

	Type	Baseline	1-month	3-month	6-month
			Follow-up		
Kick the Habit Sites					
KTH 1	Outreach	4	2	4	3
KTH 2	Outreach	5	4	5	3
KTH 3	Outreach	7	7	6	4
KTH 4	Sub-acute	11	7	11	9
KTH 5	Outreach	7	5	5	6
Total KTH		34	25	31	25
Control Sites					
Control 1	Outreach	6	6	4	3
Control 2	Outreach	11	8	9	9
Control 3	Sub-acute	13	13	10	8
Total Control		30	27	23	20
Total Outreach		40	32	33	28
Total Sub-acute		24	20	21	17
Total Completed		64	52	54	45

Note. Doesn't include withdrawals or those with no data collected

In total, 17 participants in the KTH group and 15 in the control group completed all three follow-ups (Table 2). Among those who completed two follow-ups was a mix of those who completed the 1- and 3-month follow-ups (n=12), the 3- and 6-month follow-ups (n = 8) and the 1- and 6-month follow-ups (n=3).

Table 2: Number of follow-ups per site

Site location	Site Type	1 follow-up only			2 follow-ups			All
		1	2	3	1,2	2,3	1,3	1,2,3
Kick the Habit								
KTH 1	Outreach				1	2		1
KTH 2	Outreach				2	1		2
KTH 3	Outreach	1			2			4
KTH 4	Sub-acute		1		1	3		6
KTH 5	Outreach		1	1			1	4
Total		1	2	1	6	6	1	17
Control								
Control 1	Outreach	1			2		1	2
Control 2	Outreach	1		1	1	2		6
Control 3	Sub-acute	2			3		1	7
Total		4	0	1	6	2	2	15

Note. 1= 1-month followuup; 2 = 3-month follow-up; 3 = 6-month follow-up

The number of participants who completed follow-ups varied between the KTH and control groups. At the 1-month follow-up most of those not completing questionnaires were in the KTH group, with the opposite at the 3-month follow up and similar numbers in each group at the 6-month follow-up (Figure 1).

Figure 1: Diagram of Participants and Follow-ups

	KTH	Control
Recruitment	KTH (N = 41) 5 locations	Control (N = 33) 3 locations
	7 withdrawn	1 withdrawn 2 no data
1 Month	KTH (N = 25) 9 not complete	Control (N = 27) 3 not complete
3 Months	KTH (N = 31) 3 not complete	Control (N = 23) 7 not complete
6 Months	KTH (N = 25) 9 not complete	Control (N = 20) 10 not complete
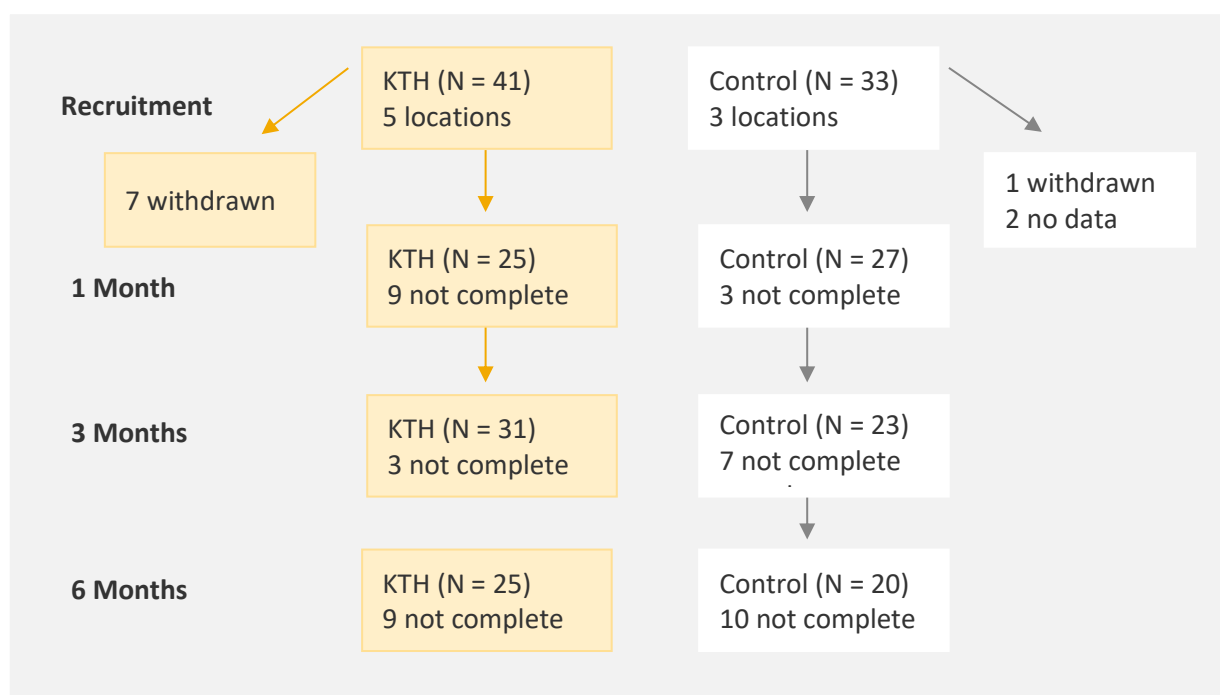
Differences in participants at each follow-up from baseline

As not all participants completed all follow-ups, there is a risk that those who completed certain follow-ups, were systematically different to all those recruited in a way that makes it difficult to interpret changes in responses over time. We therefore looked for these systematic differences in several ways by age, health and distress levels, motivation to quit and smoking characteristics in both the KTH and control groups (see Technical Report).

1-month follow-up. The 9 KTH participants who did not complete the 1-month follow up smoked less cigarettes per day and had a higher level of confidence in quitting at baseline than those who did complete this follow-up. Of these, 8 went on to complete the 3-month follow-up and 7 completed the 6-month follow-up.

3-month follow-up. The 7 control participants who did not complete the 3-month follow-up were younger, had higher levels of dependency and higher levels of psychological distress at baseline than those who did complete this follow-up. Just 3 completed the 6-month follow-up.

6-month follow-up. The 9 KTH participants who did not complete the 6-month follow-up were no different in measured characteristics than those who did complete this follow-up. The 10 control participants who did not complete the 6-month follow-up had lower levels of distress at baseline than those who completed this follow-up.

We can therefore say that those in KTH who completed the 3-month and 6-month follow-ups were generally representative of the baseline recruitment on measured characteristics, whereas there were some systematic differences in the control group at each of the 3- and 6-month follow-ups.

Characteristics of KTH and control participants at recruitment

Participants in the KTH group were younger with 50% aged under 40 compared to 24% in the control group (Table 3). There were approximately equal numbers of males and females in each group. More than 80% were Australian born and almost all participants spoke English at home. There were too few Aboriginal or Torres Strait Islander participants to report. About two-thirds of participants in each group lived alone. Four participants in the KTH group and two in the control group had dependent children. Similar proportions had at least high school completion as their highest level of education (65% in the KTH group and 57% in the control group).

None of the participants were employed. The majority were either permanently unable to work or unemployed and many received a Disability Support Pension.

Table 3: Socio-demographic characteristics of participants

Characteristic	Kick the Habit (N = 34)		Control Group (N = 30)	
	n	%	n	%
Age group				
19-29	3	9%	5	17%
30-39	14	41%	2	7%
40-49	8	24%	11	37%
50-59	9	26%	8	27%
60+	0	0%	4	13%
Gender				
Male	16	53%	17	50%
Female	14	47%	16	47%
Other	0	0%	1	3%
Australian born	29	85%	25	83%
Lives alone	22	65%	19	63%
Speaks English at home	33	97%	30	100%
Dependent children FT or PT	4	12%	2	7%
Completed high school or greater	22	65%	17	57%

Participants reported on long-standing physical or mental illnesses (Table 4). Those in the control group tended to have more physical health problems than the KTH group, especially asthma and other physical health problems which are likely to be age-related. About 60% of participants in each group reported depression. A higher proportion in the control group reported anxiety (67% compared to 47% in the KTH Group). The KTH group had more participants with bipolar disorder. Levels of psychological distress were similar with 35% in the KTH group and 27% in the control group having very high distress levels. A higher proportion in the KTH group reported fair or poor health (71%) compared to 54% in the control group.

On average, participants in the KTH Group were around four-and-a-half years younger and had smoked for a period of 26 years compared to 32 years for the control group (Table 5). Most first began smoking as teenagers. Almost all participants in the KTH group (94%) and control group (80%) had previously tried to quit smoking.

Table 4: Long-standing illness or disability, psychological distress and self-reported general health at recruitment

Health condition	Kick the Habit (n=34)		Control Group (n = 30)	
	n	%	n	%
Physical health				
Arthritis	5	15%	8	27%
Back pain	6	18%	10	33%
Cancer	0	0%	4	13%
Heart problems	3	9%	3	10%
Diabetes	5	15%	8	27%
Stroke	0	0%	1	3%
Asthma	1	3%	11	37%
Other physical health problem[a]	5	15%	12	40%
Any physical health problem	**15**	**44%**	**22**	**73%**
Mental health				
Depression	19	56%	19	63%
Anxiety	16	47%	20	67%
Schizophrenia	15	44%	11	37%
Bipolar disorder	12	35%	5	17%
Personality disorder	8	24%	3	10%
Other mental health problem[b]	5	15%	5	17%
Disability/developmental problem	**2**	**6%**	**1**	**3%**
Level of psychological distress				
Low	5	15%	4	13%
Moderate	6	18%	9	30%
High	11	32%	9	30%
Very high	12	35%	8	27%
Self-reported general health				
Excellent	0	0%	2	7%
Very good	5	15%	3	10%
Good	5	15%	9	30%
Fair	17	50%	11	37%
Poor	7	21%	5	17%

[a]Other physical health problems included Ross River, Fibromyalgia, Epilepsy, blood disorder, stomach ulcers, HIV, Parkinsons, emphysema, incontinence, high BP, high cholesterol, obesity, sleep apnea, joint issues & migraines. [b]Other mental health problems included PTSD, panic attacks, schizo-affective disorder, ADHD, eating disorder and agoraphobia.

Table 5: Smoking characteristics

Characteristic	Kick the Habit (N = 34)	Control Group (N = 30)
Mean age at recruitment	41.1 (range 20-58)	46.2 (range 19-70)
Mean age when first started to smoke	15.3	14.0
Years since first started smoking	25.8	32.3
Previously attempted to quit smoking	32 (94%)	24 (80%)
Live with a smoker	5 (15%)	5 (17%)

In both groups, the most commonly endorsed reasons for wanting to quit or reduce smoking were to 'avoid health risks', 'to improve physical health' and 'to save money' (Table 6 and Figure 2). About 90% in the KTH group and 60% in the control group reported that they wanted to improve their physical health.

Table 6: Reasons for wanting to quit or reduce smoking

Reason	Kick the Habit (n=34)		Control Group (n = 30)	
	n	%	n	%
Avoid health risks	29	85%	19	63%
Be a role model	9	26%	8	27%
Regain control	13	38%	6	20%
Pregnant, protect new family	1	3%	0	0%
To improve physical health	31	91%	18	60%
To improve mental health	16	47%	9	30%
To save money	29	85%	22	74%
To improve personal relationships	11	32%	7	23%

Figure 2: Reasons for wanting to quit or reduce smoking
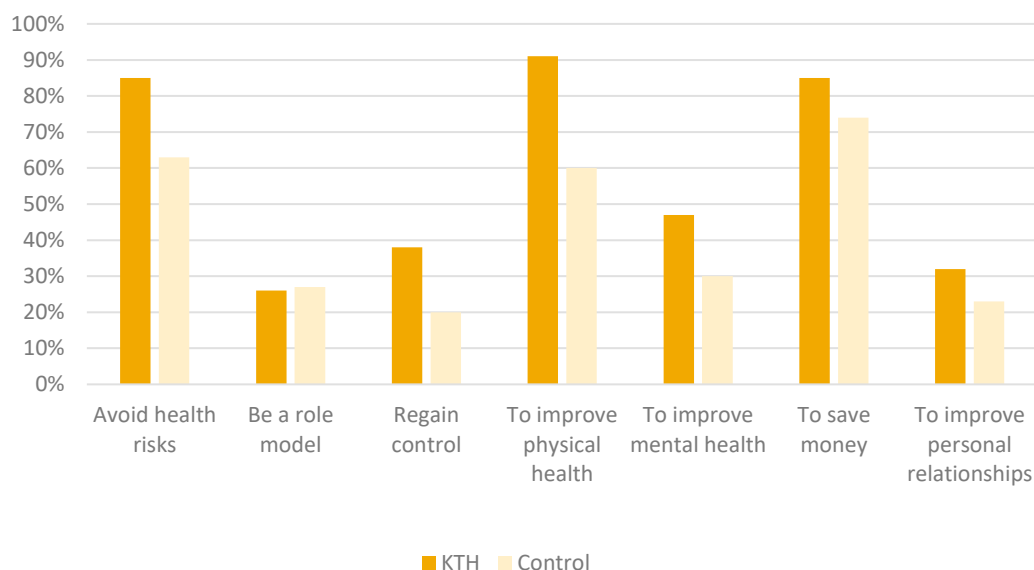
Participants in both groups were asked "How important is it to you to reduce or quit smoking?" and "How confident do you feel that you could reduce or quit smoking?" A higher proportion of participants in the KTH group compared to the control group reported that it was very or extremely important for them to reduce or quit smoking (71% compared to 51%) (Table 7). Levels of confidence in being able to reduce or quit smoking were not high in either group.

Table 7: Importance of and confidence in reducing or quitting smoking at recruitment

Rating	Kick the Habit (n=34)		Control Group (n = 30)	
	n	%	n	%
Important				
Not at all	1	3%	5	17%
Slightly	2	6%	3	10%
Moderately	7	21%	6	20%
Very	18	53%	10	33%
Extremely	6	18%	5	17%
Confident				
Not at all	1	3%	7	23%
Slightly	10	29%	5	17%
Moderately	15	44%	12	40%
Very	7	21%	3	10%
Extremely	1	3%	3	10%

Note: 1 missing response for importance of quitting in control group

Participants were asked about the average number of cigarettes they were smoking per day with response options provided in categories (part of the Fagerstrom Scale). At recruitment, nearly half of the KTH participants were smoking '11-20' cigarettes per day and mostly had a 'moderate' level of dependence according to the Fagerstrom Scale (Table 8). The control group had a higher proportion of smokers in the '10 or less' and '31 or more' cigarettes per day categories than the KTH group with corresponding higher numbers in the 'low' and 'high' dependency range.

Furthermore, participants were asked to give an estimate of the money they spent on tobacco products each week. As can be seen, there was a large range in the average weekly cost within categories of daily cigarette use with a higher maximum cost for the heavier smokers (21-30; 31+ cigarettes per day) in the control group.

Table 8: Average number of daily cigarettes, dependency scale score and reported average weekly expenditure

Study Group	Daily number of cigarettes		Fagerstrom Dependency Scale Score				Expenditure Range $
			Low	Low-Moderate	Moderate	High	
Kick the Habit	n	%					
10 or less	8	24%	0	4	4	0	$10-$110
11-20	16	47%	0	1	13	2	$25-$140
21-30	7	21%	0	0	5	2	$45-$140
31 or more	3	9%	0	0	2	1	$100-$150
Total	34		0	5	24	5	
Control Group							
10 or less	11	37%	5	6	0	0	$0-$80
11-20	8	27%	0	3	5	0	$30-$150
21-30	3	10%	0	0	1	2	$65-$210
31 or more	8	27%	0	0	0	8	$60-$350
Total	30		5	9	6	9	

Barriers to reducing or quitting smoking

All KTH and control participants were asked what makes it difficult for them to reduce or quit smoking with an open-ended response option. Several consistent themes emerged including: managing stress and/or anxiety; nicotine addiction/dependence/cravings; social benefits; boredom; and the enjoyment of smoking.

Some illustrative quotes:

"Having a beer, having a coffee in the morning, I like having a cigarette after eating, stress generally and especially stress relating to my daughter, on cold days I feel like a warm cigarette, having friends who smoke, smoking provides comfort"

"Socialising with other people, anxiety and depression. Drinking alcohol and sometimes coffee triggers me to smoke, being bored, smoking peps me up when I am feeling a bit down, it gives me a buzz".

"I get "too excited" about quitting which means I rush matters/ jump too far ahead and go cold turkey (without supports or pre-planning). Then when I have a slip up or 'mistake cigarette' this causes anxiety and feeling manic which causes a running around to find a cigarette."

"Smoking creates social opportunities. The days are long & boring - smoking fills in the time. Smoking slows consumption of drinking alcohol and coffee. Living with a smoker makes it difficult to quit. Most people smoke in psychiatric hospitals - therefore it feels almost necessary to smoke to make socialising possible."

"It kills time - it keeps me occupied. It's relaxing. It stops me from thinking. All of my friends smoke. I'm addicted. It makes me feel better."

"Isolation, loneliness, frustration, it's fun, it's recreational, a sense of intimacy, an opportunity to think and reflect, having a cigarette is like having a friend, it gives me comfort."

"My high level of anxiety (ironically!!) is a source of comfort, stress relief and 'helps' in my most anxious moments when no other relief is available. My partner also smokes, which can affect my decision to light up (or not) a cigarette".

"Intense nicotine cravings. Boredom. Slimming. Social aspect? Being around smokers in public. Reading/watching things that relate to tobacco".

"Entertaining, enjoyable, something to do, it's social, relaxes the mind but also stimulates it too, it's addictive, I like it and I want to smoke, everyone is going to die anyway."

"The habitual nature - the addiction. It relieves anger and frustration. It's an escape from reality - a coping mechanism."

"Some of my personalities smoke and some don't. If I quit or reduce it might change me somehow. The voices in my head and my different personalities make it difficult."

"Bored without smoking. Been smoking for 45 years and therefore it's difficult to break the habit. Prone to panic without cigarettes. Highly dependent and addicted."

Section 1 Summary

The pilot study had 64 participants – 34 in the KTH group and 30 in the control group that could contribute meaningful data to the analysis. At recruitment, there were 40 participants from outreach sites and 24 from sub-acute sites. The number of participants at each follow-up fluctuated with 17 participants in the KTH group and 15 in the control group completing all three follow-ups.

Some systematic differences were noted in the characteristics of those who completed each follow-up compared to characteristics of participants when recruited. At the 1-month follow-up most non-participants were in the KTH group whilst at threemonths, most of the missing follow-ups were in the control group, with similar numbers of missing in both groups at six months. Overall, those in KTH who completed the 3-month (91%) and 6-month (74%) follow-ups were generally representative of those recruited in this group in terms of measured characteristics.

Participants in the KTH group were younger with 50% aged under 40 compared to 24% in the control group. About two-thirds in each group lived alone. Very few had dependent children. None were employed. The majority were either permanently unable to work or unemployed and many received the Disability Support Pension. Higher proportions in the control group had physical health problems but more consumers in the KTH group reported fair or poor general health (71% compared to 54% in the control group). At baseline, levels of psychological distress were broadly similar with 35% in the KTH group and 27% in the control group having very high distress levels.

The most commonly endorsed reasons for wanting to quit or reduce smoking were to 'avoid health risks', 'to improve physical health' and 'to save money'. About 90% in the KTH group and 60% in the control group reported that they wanted 'to improve their physical health'. Whilst quitting or reducing tobacco use tended to be more important for those in the KTH group, levels of confidence in being able to reduce or quit smoking were not high in either group.

At recruitment, nearly half of the KTH participants were smoking '11-20' cigarettes per day and mostly had a 'moderate' level of dependence according to the Fagerstrom Scale. The control group had a higher proportion of smokers in the '10 or less' and '31 or more' cigarettes per day categories than the KTH group with corresponding higher numbers in the 'low' and 'high' dependency range. Frequently cited barriers to quitting or reducing tobacco use included managing stress and/or anxiety; nicotine addiction/dependence/cravings; social benefits; boredom; and the enjoyment of smoking.

Section 2: Smoking Status (Cessation Outcomes)

Although the primary intended outcome from participating in KTH was reduction in tobacco use, another desirable outcome was cessation of smoking during the six-month period. Most participants in both groups were still smoking when they completed their follow-ups.

Within the KTH group, five had stopped smoking at the first follow-up (Table 9). Of these, three were still not smoking at the 6-month follow-up (although one did not complete the 3-month follow-up), one did no further follow-up and one relapsed by the 3-month follow-up and did not complete the 6-month follow-up. A further KTH participant who did not complete the 1-month follow-up reported to have stopped at the 3-month but relapsed at the 6-month follow-up.

In the control group, five had stopped smoking in the first follow-up. Of these, three were still not smoking cigarettes, one did not complete and one had relapsed by the 6-month follow-up. An additional control group participant who had reduced at the 1-month and 3-month follow-ups had stopped at the 6-month follow-up. Another who did not complete the 1-month follow-up, stopped at the 3-month and relapsed by the 6-month follow-up. Those who had quit came from both sub-acute and outreach sites.

Table 9: Smoking status at each follow-up

Study Group	Baseline	Follow-up 1-month	3-month	6-month
Kick the Habit	**34**	**25**	**31**	**25**
Not smoking		**5**	**3**	**3**
Smoking		20	28	22
Sub-acute	11	7	11	9
Not smoking		2	3	2
Smoking		5	8	7
Outreach	23	18	20	16
Not smoking		3	0	1
Smoking		15	20	15
Control Group	**30**	**27**	**23**	**20**
Not smoking		5	5	4
Smoking		22	18	16
Sub-acute	13	13	10	8
Not smoking		2	1	1
Smoking		11	9	7
Outreach	17	14	13	12
Not smoking		3	4	3
Smoking		11	9	9

Characteristics of those who quit

The following information characterises those that had stopped smoking by the 6-month follow-up. It is taken from their responses to the questionnaire at recruitment together with information about use of their NRT recorded at each follow-up.

Quitters in Kick the Habit

Of the three participants in KTH who successfully stopped smoking during the 6-month study period, two were from the sub-acute site and one from an outreach site. Quitting or reducing smoking was either very or extremely important to them, and they were either very or extremely confident that they could talk to their GP about quitting. All three smoked 11-20 cigarettes per day with a moderate level of dependence. Estimated weekly expenditure ranged from $50-$120. A variety of NRT methods were reported to have been used including patches, mist, gum, an inhaler and a lozenge. None of the three successful quitters used a patch only.

> **Sub-acute. Female.** At recruitment, she was smoking 11-20 cigarettes per day with a moderate level of dependence. She estimated that she spent $120 per week on cigarettes. Quitting or reducing tobacco use was very important to her and she was moderately confident that she could do so. She was very confident that she could talk to her GP about quitting, rated her knowledge of tobacco resources as good, and of NRT as average. Her self-reported health was very good and distress levels high. She reported using a patch (at all three follow-ups) and mist at the 3-month follow-up.

> **Sub-acute. Male.** At enrolment, he was smoking 11-20 cigarettes per day with a moderate level of dependence and estimated spending $80 per week on cigarettes. Quitting or reducing tobacco use was extremely important to him and he was very confident that he could do so. He was extremely confident that he could talk to his GP about quitting, rated his knowledge of tobacco resources and of NRT as very good. His self-reported health was very good and distress levels high. He used an inhaler (1-month), patch/gum (3-month) and patch/mist (6-month).

> **Outreach. Female.** At enrolment, she was smoking 11-20 cigarettes per day with a moderate level of dependence and spending an estimated $50 per week on cigarettes. Quitting or reducing tobacco use was very important to her and she was moderately confident that she could do so. She was very confident that she could talk to her GP about quitting, and rated her knowledge of tobacco resources and of NRT as good. Her self-reported health was fair and distress levels were very high. She reported using a lozenge on recruitment and continued throughout the 6-month period. She did not use patches.

Quitters in the Control Group

Of the four participants in the control group who successfully stopped smoking during the 6-month study period (and one other who stopped but did not complete the 6-month follow-up), one was from the sub-acute site and four from the same outreach site, where they had discussed smoking and explored values around quitting using the Collaborative Recovery Model. All five were smoking 10 or less cigarettes per day with their average weekly cost of tobacco ranging from $25-$80. Quitting or reducing tobacco use was either very or extremely important to all of them, and they were very or extremely confident that they could talk to their GP about quitting. One reported using an inhaler and one reported using a spray (and nothing else).

Sub-acute. Female. At recruitment, she was smoking 10 or less cigarettes per day with a low-moderate level of dependence and estimated to spend $25 per week on cigarettes. Quitting or reducing tobacco use was very important to her and she was very confident that she could do so. She was very confident that she could talk to her GP about quitting, rated her knowledge of tobacco resources as very good and of NRT as average. Her self-reported health was good and distress levels were very high. At the 1-month follow-up (only) she reported using an inhaler.

Outreach. Female. At recruitment, she was smoking 10 or less cigarettes per day with a low level of dependence and spending about $80 per week on cigarettes. Quitting or reducing tobacco use was very important to her and she was moderately confident that she could do so. She was extremely confident that she could talk to her GP about quitting, rated her knowledge of tobacco resources as average and of NRT as good. Her self-reported health was good and distress levels were moderate. At the 1-month follow-up she reported to have explored values around quitting with the Collaborative Recovery Model with NEAMI staff but had received no further support from Neami at the 3-month and 6-month follow-ups. She quit with a friend.

Outreach. Male. At recruitment, he was smoking 10 or less cigarettes per day with a low level of dependence and estimated spending $70 per week on cigarettes. Quitting or reducing tobacco use was extremely important to him and he was very confident that he could do so. He was very confident that he could talk to his GP about quitting, rated his knowledge of tobacco resources as good and of NRT as very good. His self-reported health was fair and distress levels were moderate. At 1 month he reported to have explored values around quitting with the Collaborative Recovery Model with Neami staff and using Nicorette spray. He saw a smoking counsellor at Neami and spoke to him 4 times.

Outreach. At recruitment, he was smoking 10 or less cigarettes per day with a low-moderate level of dependence and estimated spending $60 per week on cigarettes. He had not previously tried to quit. Quitting or reducing tobacco use was very important to him and he

was slightly confident that he could do so. He was very confident that he could talk to his GP about quitting, rated his knowledge of tobacco resources as very poor and of NRT as poor. His self-reported health was fair and distress levels were moderate. He did not receive any support from Neami around tobacco management.

Outreach (Did not complete 6-month follow-up). Male. At recruitment, he was smoking 10 or less cigarettes per day with a low-moderate level of dependence and estimated spending $60 per week on cigarettes. Quitting or reducing tobacco use was extremely important to him and he was extremely confident that he could do so. He was extremely confident that he could talk to his GP about quitting, rated his knowledge of tobacco resources as average and of NRT as very poor. His self-reported health was fair and distress levels were high. At 1 month he reported to have explored values around quitting with the Collaborative Recovery Model. "Told Neami staff and other support staff of my intent to quit in order for them to keep me accountable". "Received accountability from workers. Plus some of the workers were role models for me as some had previously smoked and have now quit".

Section 2 Summary

A small number of consumers stopped smoking during the six-month period of the KTH Pilot, three from KTH sites and four from control sites at the 6-month follow-up. Those who had quit came from both sub-acute and outreach sites. Those in KTH averaged 11-20 cigarettes per day whilst those who had quit in the control group averaged 10 or less cigarettes per day.   That quitters from within the KTH group had been heavier smokers at baseline suggests KTH may have something to offer over and above the business-as-usual cessation program, especially if additional NRT products could be provided as part of the program. All reported that quitting or reducing their tobacco use was very or extremely important to them, and all were very or extremely confident in talking to their GP. A variety of NRT methods were used by the KTH group. Whilst each of those in the control group who had stopped smoking had received support from Neami staff.

Section 3: Reduction in tobacco use and dependency

The primary outcome in the study was that of reduced tobacco use and this has been gauged by several measures in the pre- and post- questionnaires – number of cigarettes, dependency level and self-reported reduction in tobacco use. Level of dependency was measured using the Fagerstrom Test for Nicotine Dependency comprising six questions.

Number of cigarettes

One of the Fagerstrom questions asked; "On average, how many cigarettes per day do you smoke?" with four response categories (for those still smoking). Among participants in the KTH group, about half were smoking 11-20 cigarettes per day at recruitment, whilst at the 3-month and 6-month follow-ups, about half were smoking 10 or less cigarettes per day (Table 10). This indicates a reduction in the number of cigarettes smoked for those completing follow-ups in the KTH group (in addition to those who had stopped smoking). There was no clear pattern of change in the control group. Of the 11 who were smoking 10 or less cigarettes at recruitment, four had stopped smoking.

Table 10: Average number of cigarettes smoked per day

Study Group	Baseline	Follow-up 1-month	Follow-up 3-month	Follow-up 6-month
Kick the Habit				
Stopped	0	5	3	3
Smoking	34	20	28	22
10 or less	8	8	15	11
11-20	16	6	8	7
21-30	7	4	3	2
31 or more	3	2	2	2
Total	34	25	31	25
Control Group				
Stopped	0	5	5	4
Smoking	30	22	18	16
10 or less	11	7	5	3
11-20	8	7	7	4
21-30	3	4	3	5
31 or more	8	4	3	4
Total	30	27	23	20

The following three tables (Table 11a-c) illustrate the shift in number of cigarettes smoked (in categories) from baseline for participants that completed follow-up interviews, including those that had stopped smoking. The shaded boxes represent those who were smoking less cigarettes (i.e. shifted categories from baseline).

Table 11a: Change in number of cigarettes smoked from baseline to 1-month

Baseline	1-month follow-up					
	Stopped	10 or less	11-20	21-30	31 or more	Total
Kick the Habit						
10 or less	1	3	0	0	0	4
11-20	3	4	4	0	0	11
21-30	1	0	2	4	0	7
31 or more	0	1	0	0	2	3
Total	5	8	6	4	2	25
Control Group						
10 or less	4	5	1	0	0	10
11-20	0	2	5	1	0	8
21-30	0	0	1	2	0	3
31 or more	1	0	0	1	4	6
Total	5	7	7	4	4	27

Table 11b: Change in number of cigarettes smoked from baseline to 3-month

Baseline	3-month follow-up					
	Stopped	10 or less	11-20	21-30	31 or more	Total
Kick the Habit						
10 or less	1	7	0	0	0	8
11-20	2	5	6	1	0	14
21-30	0	1	2	2	1	6
31 or more	0	2	0	0	1	3
Total	3	15	8	3	2	31
Control Group						
10 or less	5	3	3	0	0	11
11-20	0	1	3	1	0	5
21-30	0	1	1	0	0	2
31 or more	0	0	0	2	3	5
Total	5	5	7	3	3	23

Table 11c: Change in number of cigarettes smoked from baseline to 6-month

Baseline	Stopped	10 or less	11-20	21-30	31 or more	Total
			6-month follow-up			
Kick the Habit						
10 or less	0	6	0	0	0	6
11-20	3	5	4	1	0	13
21-30	0	0	1	1	1	3
31 or more	0	0	2	0	1	3
Total	3	11	7	2	2	25
Control Group						
10 or less	4	2	2	0	0	8
11-20	0	0	2	2	0	4
21-30	0	0	0	1	0	1
31 or more	0	1	0	2	4	7
Total	4	3	4	5	4	20

- At the 1-month follow-up, 12 out of 25 KTH participants and 9 out of 27 control group participants had stopped or reduced their tobacco use.

- At the 3-month follow-up, 13 out of 31 KTH participants and 10 out of 23 control group participants had stopped or reduced their tobacco use.

- At the 6-month follow-up, 11 out of 25 KTH participants and 7 out of 20 control group participants had stopped or reduced their tobacco use.

These tables show that the biggest reduction in the KTH group occurred at the 1-month follow-up for about half of those responding, compared to about one third in the control group. Subsequent reductions at the 3-month and 6-month follow-ups were less. There needs to be some caution in interpreting these tables as they may over- or underestimate the reduction depending on the likelihood of non-responders to have reduced their tobacco use. Even for those that did not change categories, it is still possible that they have reduced their tobacco use, for example, from 20 to 11 cigarettes per day. This use of categories instead of continuous numbers to assess the number of cigarettes smoked is one drawback of using the international standard Fagerstrom Test for Nicotine Dependence.

Dependency

Responses to the other five questions from the Fagerstrom Scale are shown in Table 12. At recruitment, there appeared to be a difference between the KTH group and control group on two questions, indicating a higher level of dependency in the KTH group. First, a higher proportion of those in the KTH group smoked their first cigarette 'within 5 minutes' of waking (71% compared to 47% of controls). Second, a larger proportion of KTH participants would 'smoke when sick' at baseline (62% compared to 43%). Over the follow-up period, "time to first cigarette after waking" and smoking when sick reduced in KTH but less so in the control group.

Using standard scoring for the Fagerstrom Dependency Scale, items were added up to a maximum score of 10 where a score of 1-2 = 'low dependence', 3-4 = 'low to moderate dependence', 5-7 = 'moderate dependence' and 8-10 = 'high dependence'. At recruitment, most of those in the KTH group had a 'moderate dependence' or 'high dependence' (29 out of 34), compared to about half in the control group (16 out of 30) (Table 13).

Table 12: Smoking characteristics (Fagerstrom scale items)

	Baseline	Follow-up		
		1-month	3-month	6-month
Kick the Habit				
Time to first cigarette after waking				
Within 5 mins	24	10	15	11
5-30 mins	8	4	7	6
31 mins or more	2	6	6	5
Difficult to refrain in forbidden places	15	5	9	5
Would hate to give up first in the morning	25	13	23	16
Smoke more in morning	20	10	17	12
Smoke when sick	21	10	9	4
Total	34	20	28	22
Control Group				
Time to first cigarette after waking				
Within 5 mins	14	10	6	7
5-30 mins	6	9	9	5
31 mins or more	10	3	3	4
Difficult to refrain in forbidden places	14	10	8	8
Would hate to give up first in the morning	19	9	14	8
Smoke more in morning	15	10	9	8
Smoke when sick	13	9	8	9
Total	30	22	18	16

For this study, a change score was calculated by subtracting the dependency score at recruitment from the dependency score at each follow-up for all those completing follow-ups. A majority of

those in the KTH group had reduced scores (by at least 1 point) at each follow-up indicating lower levels of dependence (13 out of 20, 16 out of 27, and 18 out of 22). Some control participants also had lower scores at follow-up but to a lesser extent (9 out of 22, 8 out of 18, and 6 out of 16). This result with the Fagerstrom Dependency Scale was another positive outcome for KTH compared with the business-as usual approach.

Table 13: Fagerstrom Dependency Score

		Follow-up		
	Baseline	**1-month**	**3-month**	**6-month**
Kick the Habit				
Low dependence	0	6	5	3
Low to moderate	5	0	4	6
Moderate dependence	24	11	16	10
High dependence	5	3	3	3
Change from Baseline				
Reduced (+)		13	16	18
Same score		4	7	1
Increased		3	5	3
Total	34	20	28	22
Control Group				
Low dependence	5	4	2	4
Low to moderate	9	5	4	1
Moderate dependence	6	9	7	6
High dependence	10	4	5	5
Change from Baseline				
Reduced (+)		9	8	6
Same score		8	3	4
Increased		5	7	6
Total	30	22	18	16

Higher score = higher level of dependency (range 1-10). Therefore, a reduced score is positive.

Self-reported change in tobacco use

Participants were asked about whether there had been any changes in their tobacco use. For those in the KTH group, the majority at the 1-month (20 out of 25) and 3-month (26 out of 30) follow-ups reported to have either reduced or stopped their tobacco use with less at the 6-month follow-up (16 out of 25). These numbers were much smaller in the control group (Table 14).

Table 14: Changes in tobacco use among those still smoking

	Follow-up		
	1-month	**3-month**	**6-month**
Kick the Habit			
Smoking	20	28	22
No change	4	3	4
Reduced tobacco use	15	23	12
Other	1	2	6
Stopped	5	3	3
Total	25	31	25
Control Group			
Smoking	22	18	16
No change	12	9	7
Reduced tobacco use	6	4	5
Other	4	5	4
Stopped	5	5	4
Total	27	23	20

Some of the original 'other' responses to the question about self-reported reduction were recoded, and Table 14 represents the recoded responses. Of the 10 KTH participants that initially provided comments (under 'Other') at the 6-month follow-up, several indicated that they had relapsed and were smoking more cigarettes (comments were recorded by the RA):

"Had a short period in November where she smoked due to relationship stress. Was talking with her niece who is a smoker and had a few with her"

"I've started smoking more"

"Took it up out of grief. bought two or three packs and it helped me get through that period"

"Was using the spray but it was more expensive than the cigarettes. So I stopped using it and started smoking more"

"Had quit for about 5/6, started smoking again because of increased side effects from medication" "Was feeling more depressed and couldn't take it anymore"

"Has been up and down, stop/start"

"Smoking more"

"Smoking more because of anxiety"

"Still wearing the patches, not sure when I need to take them off"

"Went up to 20 a day, and just started to reduce to 10"

Relatively fewer participants in the control group had reduced their tobacco use and as with the KTH group, some had increased their tobacco use (of the 5 originally indicating 'Other' at the 6-month follow-up).

"Gone up – stress"

"Cut down and then increased. I organise a two-yearly event and it caused a bit of stress so I started smoking again"

"Had to swap to rollies because of cost"

"Has cut down to one spray every hour"

"Increased because mental health got worse. Had psychosis"

Section 3 Summary

Evidence across several measures indicates that those in the KTH group experienced an overall trend of reduction in tobacco use that was not apparent in the control group. Among participants in the KTH group, about half were smoking 11-20 cigarettes per day at recruitment, whilst at the 3-month and 6-month follow-ups, about half were smoking 10 or less cigarettes per day. There was no clear pattern in the control group in terms of shifting numbers between categories.

Note: Using categories of cigarette numbers, as per the Fagerstrom Test for Nicotine Dependence used here, limits the quality of our analysis; some consumers could have reduced their tobacco use by several cigarettes per day, yet stayed within the same category, while others may have reduced their tobacco use by only 1-2 cigarettes per day but dropped into a lower category. This anomaly must be considered when interpreting results.

At recruitment, most of those in the KTH group had a 'moderate' to 'high' level of dependence compared to about half in the control group as measured on the Fagerstrom Scale (range 0-10). A majority of those in the KTH group had reduced scores (by at least 1 point) on the Fagerstrom Scale at each follow-up indicating lower levels of dependence compared to when they started. Some control participants also had lower levels of dependency at follow-up but to a lesser extent. As the change has been measured as a shift of just one point, it is a marker only and it may be qualitatively different depending on which items had changed (e.g. time to first cigarette in the morning), as each item had equal weight.

Participants were further asked about their changes in tobacco use at each follow-up. For those in the KTH group, the majority at the 1-month and 3-month follow-ups reported to have either reduced or stopped their tobacco use with smaller numbers at the 6-month follow-up. Fewer consumers in the control group reported changes in their tobacco use. In comments provided, some participants in KTH said they had relapsed due to a period of stress in their lives but overall their tobacco use was less, whilst others had increased their tobacco use.

Overall, we conclude that KTH may have something to offer over and above the business-as-usual cessation program offered to control group participants in terms of tobacco reduction and dependency, especially if additional NRT products could be provided as part of the program.

Section 4: Reduction in expenditure and financial benefits

The cost of smoking can represent a significant financial burden for Neami consumers, as most are reliant on welfare payments as their main source of income. One of the potential benefits of reducing tobacco use is having more money made available for other things and experiencing less financial stress. At each follow-up participants who were still smoking were asked to estimate how much money they spent on tobacco products per week, whether they had reduced their use, and whether they thought their financial situation had improved. This did not include the cost of NRT which for some participants would have offset the reduction in cost of tobacco products. As seen in Section 1 (Table 8), there was a large range in estimated average weekly expenditure associated with smoking a similar number of cigarettes.

Average weekly expenditure on tobacco products

The amount of money spent on tobacco products a week was summarised and categorised. In the KTH group, the median expenditure on cigarettes reduced from $80 at baseline to $55 at the 6-month follow-up (Table 15). In the control group there was an initial increase in estimated average expenditure from baseline (partly due to the fact that those who stopped smoking were lighter smokers) with a reduction in median expenditure from the 1-month to 6-month follow-ups.

Table 15: Average expenditure on tobacco products smoked per week

	Baseline	Follow-up 1-month	3-month	6-month
Kick the Habit				
Mean Exp$ (sd)	82 (39)	67 (39)	69 (46)	62 (38)
Median Exp$	80	77	65	55
Range$	10-150	10-120	0-200	0-140
Exp. category				
Up to $40 pw	5	6	8	8
$41-$80 pw	14	5	12	8
$81-$120 pw	9	8	5	5
More than $120	6	0	3	1
Total	34	19*	28	22
Control Group				
Mean Exp$ (sd)	91 (71)	110 (78)	90 (51)	98 (67)
Median Exp$	72	110	105	90
Range$	0-350	5-322	20-161	5-250
Exp. category				
Up to $40 pw	7	6	6	4
$41-$80 pw	10	3	2	4
$81-$120 pw	6	3	4	3
More than $120	7	10	6	5
Total	30	22	18	16

Note: these numbers do not allow for those that have stopped smoking for whom expenditure on cigarettes would be $0. Nor do they allow for the cost of NRT.

There was a general shift downward in the numbers of participants in the KTH and control groups in the highest- expenditure category (more than $120 per week).

To further assess whether expenditure on tobacco had reduced for participants still smoking, the change in expenditure at each follow-up was calculated by subtracting the estimated expenditure at baseline (i.e. where there was a difference of at least $10). Most participants in KTH were spending less on average for cigarettes at follow-up compared to the average weekly expenditure when recruited, although some were paying more (Table 16). By contrast, participants in the control group tended to be spending more on average at each follow-up compared to the amount estimated at recruitment (this may be partly influenced by the fact that those control group participants who stopped smoking were lighter smokers).

Table 16: Change in average weekly expenditure on tobacco products from baseline

	1-month	3-month	6-month
	Follow-up		
Kick the Habit			
Reduced Exp. by >= $10	11	16	12
Same Exp. (or < $10 diff)	7	8	4
Higher Exp. by >= $10	1	4	6
Total	19*	28	22
Control Group			
Reduced Exp. by >= $10	4	5	5
Same Exp. (or < $10 diff)	6	4	4
Higher Exp. by >= $10	12	9	7
Total	22	18	16

*1 missing response for a current smoker.
Note. These numbers do not allow for those that have stopped smoking or for the magnitude of the change.

Financial benefits

Participants who had either stopped smoking or reduced their tobacco use were asked if their financial situation had improved and if yes, to provide details. Among those in the KTH and control groups that had stopped smoking or reduced their tobacco use, the majority in both groups reported that it had improved their financial situation (Table 17).

Table 17: Improvement in financial situation amongst those who had stopped or reduced tobacco use

	1-month	3-month	6-month
	Follow-up		
Kick the Habit	17	23	14
Total	20	26	15
Control Group	10	5	7
Total	11	5*	9

*4 missing responses

Comments from those who reported an improvement in financial situation indicated that consumers had more money for saving and spending on essentials such as petrol, bills and food, as well as more discretionary funding such as the movies, clothing, presents and eating out. For example:

"A little bit more savings, I can go to the movies"

"Household things, clothes"

"I am able to save money for food"

"I have been able to catch up on old bills and debts. I have purchased items for my unit set up in a much quicker time frame"

"I have been able to purchase other things like music"

"I have more money to spend on my daughters"

"I've noticed money left over at the end of the fortnight which never happens"

"Put money on petrol etc"

"Slightly improved, the 10 dollars that I save helps but not significantly. I didn't smoke much"

"When I only have a couple of ciggies a day I notice I have money left in my account"

"Saved tons of money. Could spend more on food and little things like clothes. Stated they are back at uni and the extra money helps maintain lifestyle while studying"

"Was spending over $200, I tend to spend the money on clothes or saves money"

"Saving the money now. Found the financial incentive nice, but not the biggest motivator"

Others found that the total saving from a reduction in tobacco use was offset by the cost of purchasing their NRT such as lozenges. For example:

"Lozenges are a bit cheaper, but it doesn't make a huge difference unless I reduce dramatically"

"Using Nicorette spray which is just as expensive as tobacco"

"*Not really as it's been so minimal the amount I am buying lozenges so at least it's a good thing"*

Section 4 Summary

At each follow-up participants who were still smoking were asked to estimate how much money they spent per week on tobacco products, and if they had reduced their use, whether they thought their financial situation had improved. It is important to note that the participants reported how much they spent on tobacco each week and that cigarettes could have been obtained from many sources including retail, the black market or free from others. It is a rough estimate whereby expenditure may not match the average cost of a pack of cigarettes.

In the KTH group, the median expenditure on cigarettes reduced from $80 at baseline to $55 amongst those completing the 6-month follow-up. In the control group there was an initial increase in estimated average expenditure from baseline (partly due to the fact that those who stopped smoking were lighter smokers) with a reduction in median expenditure from the 1-month ($110) to 6-month ($90) follow-ups. When assessing within-person change, most participants in KTH were spending less on average (by at least $10) for cigarettes at follow-up compared to their average weekly expenditure when recruited, although some were spending more. By contrast, participants in the control group tended to have spent more on average at each follow-up compared to the amount estimated at recruitment.

Among those in both the KTH and control groups that had stopped smoking or reduced their tobacco use, the vast majority reported that it had improved their financial situation. Consumers cited a range of financial benefits including more money for saving and spending on essentials such as petrol, bills and food, as well as more discretionary funding such as the movies, clothing, presents and eating out.

Others reported little saving due to the cost of purchasing their non-subsidised NRT (e.g. spray, lozenges).

Section 5: Change in knowledge and confidence in quitting, confidence in talking to GP, and knowledge and use of NRT and strategies for quitting

Secondary aims of the KTH intervention were to improve consumer knowledge and use of strategies for quitting including NRT, and to increase their confidence in quitting and talking to their GP. KTH participants received a two-page factsheet explaining why smoking was an issue and the potential benefits of quitting. This section reports on those outcomes together with their reported use of NRT during the study.

Importance of and confidence in quitting

Questions about importance of quitting were based on a 5-point response scale from not at all important to extremely important. At baseline, higher numbers of KTH participants reported that reducing or quitting smoking was very or extremely important to them (24 out of 34) compared to participants in the control group (15 out of 30). The level of importance remained high for those in KTH across all follow-ups (Table 18).

By contrast, levels of confidence in being able to reduce or quit smoking in the KTH group were not so high at baseline (8 out of 34). Confidence levels appeared to fluctuate with increased confidence amongst those in the 1-month and 3-month follow-ups, and decreased at the 6-month follow-up. Levels of confidence were mostly low in the control group.

Levels of confidence in being able to talk to their GP about reducing or quitting smoking were relatively high in the KTH (24 out of 34 very or extremely confident) and control groups (20 out of 30 very or extremely confident) at baseline and remained high at follow-ups for KTH participants but dropping among control group participants.

Furthermore, in order to determine if participant confidence and knowledge improved at each follow-up, the baseline score was subtracted from the scores from the current rating for each item (range 1-5 with 1 indicating lowest level of importance or confidence). Therefore, "improvement from baseline" represents an increased score by at least 1 on these scales. Note, the change score does not reflect those that had a score of 5 (highest and most positive score) on both occasions.

Amongst the KTH participants, the greatest improvement in these outcomes was in the level of confidence in reducing or quitting smoking with less of an increase in confidence amongst those in the control group.

Table 18: Importance and confidence in quitting, and improvement from baseline

		Follow-up		
	Baseline	**1-month**	**3-month**	**6-month**
Kick the Habit				
Reducing/quitting is *very/extremely* important	24	21	25	19
Very/extremely confident in reducing/quitting	8	10	12	7
Very/extremely confident in talking to GP	24	15	25	21
Improvement from baseline:				
Importance of reducing/quitting		5	7	8
Confidence in reducing/quitting		11	11	9
Confidence in talking to GP		3	8	8
Total	34	25	31	25
Control Group				
Reducing/quitting is *very/extremely* important	15	17	13	13
Very/extremely confident in reducing/quitting	6	12	8	6
Very/extremely confident in talking to GP	20	15	9	10
Improvement from baseline:				
Importance of reducing/quitting		6	8	9
Confidence in reducing/quitting		8	6	5
Confidence in talking to GP		4	5	6
Total	30	27	23	20

Note: Missing responses for some of these questions.

Knowledge of resources for quitting and NRT

Questions about knowledge of resources to help quit or reduce smoking and knowledge about NRT were based on a 5-point response scale from very poor to very good. At baseline, 20 out of 34 participants in the KTH group and 19 out of 30 in the control group had good or very good knowledge of resources to help reduce or quit smoking (Table 19). This level of knowledge remained at a similar level across those completing follow-ups (with a drop off at six months in the control group). Approximately half of those in the KTH group reported good or very good knowledge of NRT at baseline and in each follow-up. This level of NRT knowledge was similar in the control group, also with a drop off at six months.

Furthermore, to assess individual changes, the baseline score was subtracted from the scores from the current rating for each item (range 1-5 with 1 indicating lowest level of knowledge). Therefore, 'improvement from baseline' in the table represents an increased score by at least 1 on these scales. These numbers indicate a greater improvement in knowledge of NRT in the KTH group compared to the control group. Note, the change score does not reflect those that had a score of 5 (highest and most positive score) on both measures.

Table 19: Knowledge of resources to help or reduce quitting and improvement from baseline at each follow-up

	Baseline	Follow-up		
		1-month	3-month	6-month
Kick the Habit				
Knowledge of resources (Good/Very Good)	20	13	19	17
Knowledge of NRT (Good/Very Good)	18	15	17	14
Improvement from baseline:				
Knowledge of resources		6	9	7
Knowledge of NRT		13	13	9
Total	34	25	31	25
Control Group				
Knowledge of resources (Good/Very Good)	19	17	14	7
Knowledge of NRT (Good/Very Good)	17	13	13	8
Improvement from baseline:				
Knowledge of resources		10	5	5
Knowledge of NRT		9	5	3
Total	30	27	23	20

Note: Missing responses for some of these questions.

Use of NRT

All participants were asked about their use of NRT upon recruitment into the study, and at each follow-up for the KTH participants. At baseline, 10 participants in the KTH group and 9 in the control group indicated that they were using alternative sources of nicotine such as chop-chop tobacco, e-cigarettes and different forms of NRT.

During the study period, most KTH participants were using NRT as part of their TMP with the most common therapy being a patch, although a variety of types were in use in both the sub-acute and outreach sites (Table 20). About a third of participants at each follow-up reported using more than one type of NRT. Some additionally reported to be using E-cigarettes as an alternative source of nicotine (Q9) and these have been added to the table.

Table 20: Type of NRT used by Kick the Habit participants

	Follow-up		
	1-month (n = 25)	3-month (n= 31)	6-month (n = 25)
No NRT	**3**	**4**	**3**
NRT	**22**	**27**	**22**
Patch	11	16	14
Gum	2	3	3
Lozenge	4	6	5
Mist	5	5	7
Oral strip	0	0	0
Inhaler	8	5	1
E-cigarettes	2	4	1
More than 1 type	**9**	**10**	**9**

Support received in control group

Participants in the control group were asked about whether they had received any support from Neami to help reduce or quit smoking. More than half at the 1-month follow-up had received some kind of support from Neami and this dropped off by the 6-month follow-up. The support included being offered NRT and general support and encouragement (Table 21).

At the first follow-up, seven participants in the control group reported to have been offered NRT by Neami staff to help reduce or quit smoking – these were in the sub-acute site where NRT was offered as per usual practice at this site (patches, gum and inhaler). Of the four participants in the 6-month follow-up who reported to have been offered patches, three said they didn't use them.

Table 21: Support from Neami to help reduce or quit in the Control Group

	Follow-up		
	1-month	3-month	6-month
Did not receive support on tobacco management	**12**	**11**	**13**
Received some support	**15**	**11**	**7**
Explored values around quitting – Collaborative Recovery Model	5	3	0
Support to talk to GP	0	1	0
Attended quit group	0	1	1
Other:-	10	7	7
NRT (offered and/or tried)	7	4	4
Quitline	1	0	0
General discussion/support	2	3	3
Total	**27**	**22***	**20**

Note. Multiple responses allowed.
*1 missing response

Section 5 Summary

Secondary aims of the KTH intervention were to improve consumer knowledge and use of strategies for quitting, as well as increasing their confidence in quitting and talking to their GP.

At recruitment, higher numbers of KTH participants reported that reducing or quitting smoking was very or extremely important to them than those in the control group. The level of importance remained high for those in KTH across all follow-ups. By contrast, levels of confidence in being able to reduce or quit smoking in the KTH group were not so high initially and fluctuated across follow-ups. Levels of confidence were mostly low in the control group.

About 60% of consumers in the KTH group and control groups had good or very good knowledge of resources to help reduce or quit smoking, and this level of knowledge generally remained at a similar level across those completing follow-ups. About half of those in the KTH group reported good or very good knowledge of NRT at baseline and in each follow-up. There was a greater improvement in knowledge of NRT in the KTH group compared to the control group.

During the intervention, most KTH participants were using NRT as part of their TMP with the most common therapy being a patch, although a variety of types were in use. About a third of participants at each follow-up reported using more than one type as part of their TMP. At the first follow-up, about half of consumers in the control group had received some kind of support from Neami staff to help reduce or quit smoking; seven of these reported having been offered NRT at the sub-acute site although they didn't necessarily use it.

Section 6: Changes in health and wellbeing

This section examines whether involvement in KTH has been associated with health and wellbeing outcomes including a reduction in the perceived harmful impacts of tobacco use on health, improved self-rated health, improved life satisfaction and lower levels of psychological distress. Changes in wellbeing could also have been related to the experience of trying to quit which can increase stress and health impacts, or to the general benefits of receiving Neami services. In addition, the level of psychological distress was associated with participation in follow-ups in the control group. Therefore, changes are difficult to detect and attribute to participation in KTH.

Perceived harmful effects of tobacco use

The perceived harmful effects of tobacco use on aspects of wellbeing were reported using a Likert scale of strongly disagree to strongly agree, scored from 1-5 for each item. At baseline, the greatest harmful impact of tobacco use in both groups was on physical health and finances (Table 22). These mostly remained the predominant issues at follow-up after an initial decline in the proportion of those who strongly agreed from baseline in both groups.

Table 22: Harmful impact of current tobacco use (number that 'Strongly Agree')

		Follow-up		
	Baseline	1-month	3-month	6-month
Kick the Habit				
Mental health	9	5	8	11
Physical health	23	10	16	15
Relationships	5	1	5	2
Finances	24	10	16	13
Self-esteem	6	3	3	5
Other impacts				
Helps socialise	8	1	7	3
Feel disapproval	6	5	6	6
Total	34	25	31	25
Control Group				
Mental health	7	5	3	3
Physical health	16	11	7	6
Relationships	10	3	2	1
Finances	22	15	11	11
Self-esteem	4	4	4	0
Other impacts				
Helps socialise	7	7	5	3
Feel disapproval	8	7	7	8
Total	30	27	23	20

A change score was calculated as the difference in score at each of the follow-ups compared to the baseline score. A negative score indicated that the level of perceived harmful impact had reduced at follow-up (e.g. from strongly agree to somewhat agree). Although the goal was that the harmful effect of tobacco use would reduce over time for those in KTH, a greater endorsement or stronger agreement about harmful effects could also be due to increased knowledge and awareness and/or withdrawal or health/stress effects associated with reducing tobacco use.

Table 23 reports the numbers whose score on the scale from 1-5 had reduced at each follow-up compared to baseline scores. The numbers with reduced scores were generally similar across items for KTH and control groups with the most notable difference being a reduction in numbers who feel disapproval from others when they smoke in KTH compared to the control group. In addition, it appeared that KTH participants perceived less of an impact of their tobacco use on their self-esteem at the 1-month and 3-month follow-ups compared to the control group.

Table 23: Reduction in perceived harmful impact of current tobacco use from baseline

	Follow-up		
	1-month	**3-month**	**6-month**
Kick the Habit			
Mental health	8/23	14/30	10/24
Physical health	11/23	11/31	8/24
Relationships	13/22	13/29	13/23
Finances	11/23	13/31	10/25
Self-esteem	9/23	13/30	8/25
Other impacts			
Helps socialise	9/22	12/31	15/24
Feel disapproval	10/21	16/30	8/25
Control Group			
Mental health	9/25	8/23	9/20
Physical health	6/25	9/23	7/20
Relationships	13/25	11/22	9/20
Finances	8/26	9/23	6/20
Self-esteem	5/26	4/23	7/20
Other impacts			
Helps socialise	7/26	7/23	7/20
Feel disapproval	5/26	2/23	4/20

Note. The denominator varies due to some missing responses either at the baseline or follow-up or due to a response of "N/A or unsure"

Self-reported general health

Self-reported general health was measured on a five-point scale from excellent to poor, scored from 1-5 for the analysis. At the start of the study, the self-reported health of those in the KTH group seemed to be poorer than those in the control group with just 29% having excellent, very good or good health compared with 47% in the control group (Table 24).

The self-reported health (numbers reporting excellent, very good or good health) of those responding at each wave in the KTH group was better in the 3-month and 6-month follow ups. Apart from an increase at the 3-month follow-up, the self-reported health of those in the control group remained at a similar level.

Change in general health was calculated by subtracting the baseline score from the follow-up score with a negative score indicating better health and a positive score indicating poorer health. Up to about a third of participants in the KTH and control groups had better self-reported health at each follow-up. Note, the change score does not reflect those that had excellent health on both occasions.

Table 24: Self-reported health

Study Group	Baseline	Follow-up 1-month	Follow-up 3-month	Follow-up 6-month
Kick the Habit				
Excellent, very good or good health	10	8	14	12
Change from baseline				
Better		6	7	9
Same		12	20	11
Worse		7	4	5
Total	34	25	31	25
Control Group				
Excellent, very good or good health	14	12	14	8
Change from baseline				
Better		4	7	7
Same		18	11	4
Worse		5	5	9
Total	30	27	23	20

Life satisfaction

At each follow-up, participants were asked "overall, how satisfied are you with life as a whole these days?" Responses were in the range of 0-10 with 0 = not satisfied at all and 10 = completely satisfied. About a third of those in the KTH group and one fifth in the control group had a 'high' level of life satisfaction at baseline (Table 25). Numbers with 'high' satisfaction increased at the 1-month follow-up then reduced again for both groups at the 3-month and 6-month follow-up. Change in life

satisfaction was calculated by subtracting the baseline score from follow-up scores whereby "improved satisfaction" represented an increased score of at least 1. Numbers with improved satisfaction were mostly less than 50% with no big differences between KTH and control participants.

Table 25: Level of life satisfaction

	Baseline	Follow-up		
		1-month	3-month	6-month
Kick the Habit				
Low (score 0-3)	8	1	5	4
Medium (score 4-6)	15	18	13	13
High (score 7-10)	11	6	13	8
Improved satisfaction		10	16	11
Total	34	25	31	25
Control Group				
Low (score 0-3)	9	8	8	7
Medium (score 4-6)	15	10	8	8
High (score 7-10)	6	9	7	5
Improved satisfaction		10	7	8
Total	30	27	23	20

(Range 0-10 on original scale with 0='Not satisfied at all' and 10='completely satisfied'.

Psychological distress

The Kessler-10 psychological distress score was categorised using standard ABS methods (score 10-15='low'; 16-21='moderate',22-29='high' and 30-50='very high') (Kessler, 2005). There were some cases with missing scores at the 3-month and 6-month follow-up. Levels of psychological distress at recruitment were broadly similar with 35% in the KTH group and 27% in the control group having 'very high' distress levels (Table 26). Numbers with 'very high' distress levels reduced from 1-month follow-up in the KTH group and from the 3-month follow-up in the control group (partly attributed to the higher levels of distress in the control group non-responders at 3 months).

Table 26: Level of psychological distress at each follow-up

	Follow-up			
	Baseline	1-month	3-month	6-month
Kick the Habit				
Low	5	4	8	4
Moderate	6	9	4	2
High	11	9	6	11
Very high	12	3	5	5
Total	34	25	23	22
Not completed	0	0	8	3
Control Group				
Low	4	4	9	3
Moderate	9	6	4	6
High	9	7	5	5
Very high	8	10	4	3
Total	30	27	22	17
Not completed	0	0	1	3

Section 6 Summary

Involvement in KTH could have been associated with an improvement in health and wellbeing but also lowered wellbeing due to stress involved with trying to quit. Across the various measures, there were no clear patterns of change in either the KTH or control groups and any change observed is reported only tentatively. The greatest perceived harmful impact of tobacco use was on the physical health and finances of participants in both groups. This remained the case across follow-ups. When calculating within-person change scores, the most notable difference was a reduction in numbers who felt disapproval from others when they smoked in KTH compared to the control group.

At the start of the study, the self-reported general health of those in the KTH group was generally poorer than those in the control group with just 29% having excellent, very good or good health compared with 47% in the control group. Up to about a third of participants in the KTH and control groups had better self-reported health at each follow-up. About a third of those in the KTH group and one fifth in the control group had a high level of life satisfaction at baseline. These proportions with high satisfaction increased at the 1-month follow-up then reduced again for both groups at the 3-month and 6-month follow-up. Levels of psychological distress were broadly similar with 35% in the KTH group and 27% in the control group having very high distress levels. Numbers with very high distress levels reduced from 1-month follow-up in the KTH group and from the 3-month follow-up in the control group (a reduction influenced by non-responders in the control group having higher distress levels than responders).

Section 7: Participant feedback on program

This section examines the consumer experience of KTH. Participants were asked four qualitative questions (listed below). Question 1 was asked in the pre-interview, questions 2-4 were asked in the post interviews. Reponses were recorded by the RA in an excel document and compiled for thematic analysis once data collection was completed.

1. What makes it difficult for you to reduce or quit smoking?
2. What do/did you like about Kick the Habit?
3. What are/were the benefits to you of doing Kick the Habit?
4. What can we do make Kick the Habit better?

Understanding the consumer experience

Consumers in the pilot study found KTH was a valuable and enjoyable approach to smoking behaviour change. Their feedback suggests a range of financial, health and social benefits. Looking at the group experience of KTH over the trial we saw positive change with consumers reporting that they are generally smoking less cigarettes daily, spending less on tobacco products and have decreased their dependency on tobacco.

Positive results were most noticeable in the first month after KTH. Conversations with consumers at the final interview indicate many were no longer talking with their workers about smoking or hadn't in some time. Findings indicate that sustaining smoking behaviour change may be improved by maintaining coaching conversations over a greater length of time.

What were the barriers?

Before Kick the Habit

When asked what made it difficult to consider their smoking behaviour prior to commencing KTH most consumers identified the physical nicotine addiction as a barrier. The social benefits, boredom and the pleasure of smoking were also significant in sustaining and motivating smoking behaviour. See also consumer responses in Section 1, page 33.

Associated behaviours

Once consumers had engaged with KTH and developed a TMP other barriers emerged. The association of smoking with another activity, like their morning coffee or drinking alcohol, became a challenge. Some consumers found that to give up they needed to address these associated behaviours as well.

Mental health and medication

For people living with mental illness changing smoking behaviour is further complicated by the use of medications and the episodic nature of mental health symptoms. Some consumers experienced adverse side effects while reducing due to the complex interaction of medication and nicotine. Many also identified that they used smoking to alleviate medication side effects like drowsiness or appetite. Experiencing a period of poor mental health or distressing life event further complicated behaviour change for consumers. Several stated that they started smoking again while in hospital or to manage stress.

What worked well?

NRT and Allied Health support

Access to free NRT for two weeks was a huge support for consumers able to take advantage of it. These consumers reported feeling more confident to reduce or quit smoking knowing they would not have to worry about managing physical nicotine cravings. In addition to actually receiving the patches, using NRT prompted conversations about quitting with GPs, psychiatrists and other supports. In situations where a consumer resumed their smoking habit, several mentioned they now felt confident to talk to their GP when they were ready to cut down again. Others reported that their GP now brings up smoking with them more often, prompting them to review their progress.

Developing the skills and confidence to cut down

Changing behaviour around smoking whether the goal is to quit or reduce tobacco use is rarely a linear process, and most people will attempt change several times. For consumers who engaged with KTH the act of practicing to see what works, and what doesn't, had far reaching value. Consumers spoke about feeling more confident to approach their GP and implement the strategies they developed with their worker on their own in the future. The confidence to address habits also extended beyond smoking for some consumers who found it supported change in other areas of their life.

What could be improved?

Greater variety of NRT and for longer

Only patches were available on the PBS at the time of the pilot. These didn't suit everybody, and several consumers preferred lozenges, gum or sprays. Some were put off by the high costs of other forms of NRT because it minimised the financial incentive to quit.

More talking, more check-ins

Consumers found one-on-one support vital for staying motivation and assessing progress. Many wanted their worker to ask them about smoking more often and review their TMP when progress slowed or they resumed smoking. Comments from consumers indicated that addressing smoking behaviour can fall off the agenda for a variety of reasons: a period of poor mental health, disengaging from support, changing workers and/or more pressing issues. Many felt they needed their worker (or other supports) to keep them on track with their TMP.

Consumers often saw follow up calls from researchers at 1, 3 and 6 months as part of the program and commented on how helpful they found it having someone check in. General feedback indicated consumers would like regular phone coaching as a part of the program.

Section 8: Site manager, support worker and research assistant feedback on Kick the Habit program and research implementation, and how it could be improved

Feedback about the implementation of KTH and of the research component at intervention and control sites was obtained from Site Managers and the Research Assistants (RAs). Site Managers gave unstructured feedback. The RAs completed the 'End of Program Questionnaire' as part of their handover back to the central RA at the end of the 12-week period on the project at the Site (Attachment 5). It included questions about the research process, staff training for KTH, program implementation and personal reflections on their experience in the role. In addition, the lead researcher at TKI spoke to several sites early in the Program implementation. This combined feedback provided valuable information about the feasibility of conducting a research study in these settings including how each site implemented the KTH training and the program, what challenges were faced, what worked well and suggestions for improvement. In this section, these comments have been summarised across major areas including:

      i.   Staff training;

      ii.   Staff attitudes, perceptions and existing workloads;

      iii.   Recruitment and implementation processes;

      iv.   Consumer barriers to participating and staying motivated;

      v.   Availability, cost and dispensing of NRT; and

      vi.   Follow-up questionnaires.

Staff Training

Staff training involved a group presentation of 1-2 hours in length and an online component (staff resource pack). However, as outlined earlier, there was variability in how that content was delivered across the sites.

- **Timely delivery of training relative to program launch.** At some of the original sites, the time between training and launch of KTH was too long (several months) which meant that the training was not necessarily retained by staff and they felt underprepared. In contrast, for one site that came on board in early 2017 the time between training and commencement of the program was too short (a few weeks). In this case, the training felt too rushed and there was not enough time to reflect on the content and review the training resources.

- **Training content.** Many expressed the need for more practical hands-on training both in the training session and leading up to implementation.
- **Clarity of roles and responsibilities.** The different roles of staff involved in KTH weren't always clear from the perspective of staff and consumers, especially at the start of the Program.

Staff attitudes, perceptions and existing workload

Staff support was critical for successful adoption of KTH at each of the sites and initial attitudes and/or lack of confidence or time to implement a new program acted as barriers to implementation. As staff became more familiar with the program and had practice in completing TMPs, attitudes improved and confidence grew. In control sites, the research was not necessarily well promoted by staff. Issues included:

- **Staff attitudes and perceptions.** Initially, attitudes at some sites indicated that staff did not believe that smoking cessation programs worked for their clients and they had preconceived notions about the desire by consumers to reduce their tobacco use or quit smoking.
- **Mental health service attitudes and concerns.** Some of the support workers also felt that psychiatric services had negative attitudes and were not interested in KTH.
- **Staff who were also smokers were less motivated** to embrace the KTH approach (although according to protocol were supposed to be excluded from involvement).
- **Initial low motivation was linked to low confidence and uncertainty** in how to introduce the program and work with consumers. It took encouragement and repetition to get staff to engage.
- **Motivation was also tied to capacity and competing demands** on staff time and more pressing things which staff needed to discuss such as the NDIS.

Recruitment and implementation processes

The implementation plan involved support workers initially starting a conversation with consumers about their smoking and asking if they would be interested in KTH. With consent, the consumer was then to be contacted by the RA. The recruitment process appeared to run smoothly across sites. There were no issues reported with the consent forms and information sheets, apart for the suggestion for more clarity around NRT.

- **Difficulty in starting the conversation with consumers.** Apart from initial attitudes and workload barriers, some staff had difficulties in starting a conversation with consumers especially if the consumer was experiencing a crisis and the support worker felt that they weren't in the 'right place' to talk about smoking.

- **Some consumers in control sites didn't want to feel pressured to change** (quit or reduce their tobacco use) and therefore it was difficult to talk about smoking and recruit them into the research project.

- **One site found that running an information session** for consumers was helpful by encouraging participation and generating discussion.

- **Recruitment at sub-acute site** presented its own difficulties due to the shorter time-period for recruitment alongside work pressures (28-day stay). Delays in getting started following consumer interest in participating did not allow for enough support time.

- **Minimal contact with Neami for some consumers at outreach sites.**

Consumer barriers to participation/staying motivated

Staff identified several consumer-based barriers to participation that either prevented them from approaching the consumer to talk about smoking, or meant that the consumer was unwilling or unable to participate. There were also barriers to staying motivated. Barriers included:

- Consumer in crisis/in hospital/homeless

- Smoking when in hospital was not discouraged by staff

- Stage of readiness was a big factor. Some were not ready to change

- Consumer focused on bigger problems such as on reducing their alcohol and other drug use or gambling addiction

- Changing mental health status/current stressful circumstances

- Restricted by existing medication regime/health condition that made it difficult to use NRT

- Discomfort with interview/research-type situations

- Feeling of inadequacy/shame when they have not succeeded with their smoking goal

- Living with smokers

- Cheap cigarettes on offer nearby.

Availability, cost and dispensing of NRT (KTH participants only)

Consumers were given free access to patches for the first two weeks of KTH after which they were encouraged to visit their GP and obtain a prescription for NRT. Some of the issues were:

- **Limited free access (2 weeks).** Many participants would have liked free access to NRT for a longer period. Some had difficulties getting their GP to prescribe further NRT after the program completed and others had already used their annual quota.

- **Greater variety of NRT needed.** Patches were not suitable for everyone but the cost of other types of NRT were often prohibitive.

- **Timely dispensing of NRT on the Program.** At the sub-acute site, there were some initial problems with the timely dispensing of NRT by nursing staff relative to completion of the TMP.

Completing follow-up questionnaires

Follow-up questionnaires were completed at one, three and six months after participation in the Program and this was completed by either the RA employed for the site (one-month and some three-month follow-ups) and/or by the central RA for other follow-ups. Some of the issues were:

- Consumer was difficult to contact/missed scheduled meetings

- Completing follow-ups was difficult for consumers that were in and out of hospital

- Language/cognitive difficulty

- Reluctance to answer questions. For those in control groups, the questions created the expectation of change in tobacco use

- It became apparent to the RA during administration of the questionnaires that the consumer needed mental health support

- The K10 was a trigger for distress and ended the survey on a negative note. This potentially raised a duty of care issue for Neami

- Some consumers wanted to elaborate and explain their answers (which was positive but not recorded by the RA).

Section 9: Summary and Discussion

Main outcomes

This pilot study tested a new way of helping smokers with severe and persistent mental illness to reduce their tobacco use. The intervention was based on a Consumer Centred Tobacco Management approach, Kick the Habit developed by Neami and the Telethon Kids Institute. There were 34 consumers from across five Neami sites in the KTH group and 30 from three sites in the control group with sufficient follow-up data to support evaluation of the KTH intervention. Consumers in the KTH group tended to be younger, have poorer self-rated health and moderate levels of tobacco dependency compared to consumers in the control group. These observed differences at baseline, together with fluctuating numbers participating in follow-ups, may have influenced differences in outcomes observed between the KTH and control groups over the 6-month period.

Positively, many consumers participating in KTH during the pilot study reduced their tobacco use. Based on descriptive results and comments from consumers, there is sufficient evidence of a reduction in tobacco use for those participating in KTH, a reduction that was not evident in the control group. Due to small numbers participating, these results are not conclusive but indicative of a positive change for these consumers.

There were three main indicators of reduced tobacco use - a reduction in the number of cigarettes smoked, reduced tobacco dependency levels and a self-reported reduction in tobacco use. First, for those participating in KTH, there was a shift downwards in the number of cigarettes smoked from about half smoking 11-20 cigarettes per day initially, to about half of KTH participants smoking 10 or less per day at the 3-month and 6-month follow-ups. When we looked further at the reduction (change in category) for individual consumers in KTH, the biggest reduction was observed in the first month with approximately half either dropping down a category or reporting that they had stopped. This measure may have underestimated the reduction in number of cigarettes as categories were pre-specified. Second, using the Fagerstrom Test for Nicotine Dependence, those in KTH had, on average, moved from a 'moderate' to a lower level of dependence. Third, the majority of consumers in KTH reported to have either reduced their tobacco use or stopped altogether. On each of these measures, the reduction was much less evident in the control group. Reductions weren't necessarily easy with several consumers reporting relapses along the way as they tried to manage mental health symptoms, medication effects and other stressful/unexpected events in their lives.

One of the main reasons for consumers wanting to quit or reduce their tobacco use was to improve their finances and many participants in KTH did reduce the amount of money they spent on tobacco each week, even if just by a small amount. The overall savings for KTH participants in this study were difficult to quantify as the cost of smoking a similar number of cigarettes varied considerably

amongst consumers. Some who were still smoking, recorded the average weekly cost to be $0 and we assume that they accessed cigarettes for free from family, friends or others. Some consumers may have been buying cheaper brands or at a substantially discounted price at supermarkets, as was reported at one outreach site. At the other end of the scale, the maximum weekly cost at enrolment for a participant in the control group smoking 31 or more cigarettes daily was $350. Comments from consumers who had reduced their tobacco use or stopped altogether, noted financial benefits that centred around being able to better meet some of the essential costs of living.

Nicotine replacement therapy was a key part of KTH. As per the study protocol, consumers on KTH were offered two weeks of free NRT (specifically nicotine patches) after which they were advised to see their GP for a prescription which would give them access to a 3-month supply of patches at a subsidised cost, around $6 per script for those on approved DSS welfare payments. The free initial NRT was greatly appreciated by participants. However, engaging with the NRT element of KTH was difficult for some consumers because of medication regimes and/or their physical health such as a heart condition which precluded the use of nicotine patches. Consumers who can't use NRT (but want to) have more difficulty managing physical nicotine cravings and have a psychological barrier because they can't access a tool available to everyone else. Consumers with complex medication regimes needed to consult with their clinical support before starting NRT. In one case, the clinical supports wanted to take their own staged approach, another consumer delayed their goal of quitting as their regular psychiatrist did not want to engage with their plan. Consultation needs to occur between a consumer, their clinical supports and support workers before developing a TMP so any potential barriers can be identified and worked around. This includes understanding potential side effects and/or mental health symptoms consumers might encounter when reducing smoking (caffeine or medication related). Clear communication, understanding and having a clear plan to manage these is crucial or consumers may relate ill effects to not smoking and resolve to take the habit back up.

Overwhelmingly, consumers wanted a greater variety of NRT and for a longer period. Although the main type of NRT used by KTH participants was a nicotine patch, it was often used in combination with other forms of NRT. At the 1-month follow-up just over half of consumers in KTH were using patches with others using gum, lozenges, mist, inhaler or e-cigarettes at their own expense. Ensuring a consistent supply of NRT was difficult at times. At short stay facilities, not being able to coordinate NRT in a timely manner resulted in some consumers not getting NRT at all before discharge. NRT is crucial for managing nicotine cravings and without this support at the beginning it may be difficult for individuals to succeed. For those that ended up purchasing different types of NRT, the financial benefits of reduced tobacco use were lost or minimised. Others had already used their annual quota of 12-weeks subsidised NRT (patches) under the PBS. The availability and affordability of alternative NRT types is a critical issue for all smokers wanting to quit or reduce their tobacco use. The

combination of two forms of NRT (patch plus an oral type such as gum or lozenge) has proven to be more efficacious than a single form of nicotine replacement (Zwar et al., 2011). The cost barrier in accessing oral NRT may have influenced the ability of consumers to cut-down or quit and highlights a gap in Australian health policy in supporting other forms of NRT, especially for economically disadvantaged smokers needing additional help to quit smoking. Proposed changes to the PBS to widen the variety of NRT types available on subsidy in 2019 (lozenges and gum) are welcomed, but we note this still excludes spray and mist applications, doesn't address the 12-week time quota for subsidised NRT, and doesn't yet allow for combination NRT that would be consistent with clinical guidelines (Australian Government Department of Health, 2018).

Very few consumers in either group quit smoking during the period although it is not known how many consumers in KTH stated this as their goal in their TMP, or whether they had made any quit attempts in the periods preceding the follow-ups (this question was not asked). Overall, just three consumers in the KTH group and four consumers in the control group had stopped smoking and remained smoke-free at the 6-month follow-up. The three successful quitters in KTH used a variety of NRT types. Other smoking cessation (group-based) programs targeted at mental health consumers have had mixed results in terms of participants quitting, but also difficulty in quantifying outcomes due to loss to follow-up post-program. For example, among those who participated in group programmes through the Tobacco and Mental Illness Project in Adelaide, 25% of those who attended three or more sessions and could be contacted for evaluation had stopped at the end of the program (Ashton et al., 2013). This Program also included subsidised NRT. An evaluation of the SANE Australia Smokefree kit as part of the Breath Easy Project in NSW reported little change in smoking status from baseline to the end of the project. However, the majority of participants at the demonstration sites were interested in cutting down initially rather than quitting straight away. In this study sample, almost all of those in KTH and 80% in the control group had previously attempted to quit smoking, and had likely made several attempts.

Increased confidence in reducing tobacco use amongst KTH participants and knowledge about strategies to achieve their goals was an important step along the way. For most KTH participants reducing their tobacco use was very important to them from the start but this was coupled with an initially low level of confidence that tended to improve but not to the highest levels (being very or extremely confident). Levels of confidence may have fluctuated as consumers tried different strategies, different types of NRT and dealt with other challenges in their lives that may have caused a relapse and a need to re-focus on their management plan. At recruitment, more than half had a good or very good knowledge of NRT products and overall this level of knowledge improved during the pilot for those who began with lower levels of knowledge.

Changes in wellbeing over the six-month period were difficult to assess as all Neami consumers were experiencing severe and persistent mental illness, especially those in sub-acute residential facilities. Many recorded high or very high levels of distress at baseline on the Kessler Scale. Among those that participated in follow-ups there was a reduction in numbers experiencing very high distress levels, which was also seen from the 3-month follow-up in the control group. It is difficult to attribute any reduction in distress to participation in KTH as reducing symptom severity and capacity to cope with mental illness is fundamental to Neami services. At the same time, consumers typically face challenges with changing mental health status, side effects from existing medication or changes to medication and in some cases a crisis leading to hospitalisation. These things all serve to heighten distress, impact on tobacco reduction goals and/or detract from successes in tobacco reduction. Levels of general self-rated health and life satisfaction fluctuated across follow-ups, again with no clear pattern of change; if anything – a slight improvement in both groups.

Staff attitudes, motivation and training, and capacity of the site to incorporate KTH were all critical elements of its successful adoption. Initially staff attitudes at some sites reflected what has been a prevailing stigmatising attitude in the mental health sector towards smoking amongst people with mental illness i.e.; consumers are not interested in quitting, it's a form of self-medication, it helps relieve stress, and smoking programs don't work in this population. Such perceptions have been encountered (and overcome) in other interventions when staff have been given the opportunity to hear the consumer perspective (Mental Health Coordinating Council, 2009). Staff also lacked motivation due to low confidence and uncertainty in how to introduce the program to consumers. There was existing pressure and competing demands on staff including rollout of the NDIS. All these aspects reflected the reality of working in community mental health settings and thus staff training and adequate time allowed for the introduction of KTH was crucial. Staff wanted more practical hands-on training to help start the conversation with consumers and to complete a TMP. For some sites the delay between training and program start resulted in loss of knowledge and confidence in 'starting the conversation' whilst for others there was not enough time. As time went on and staff became more familiar with the program and practiced in working with consumers, attitudes improved and confidence grew. The program itself did not involve organisational level changes to policy and practice, so the degree to which KTH was adopted was very site dependent. The conduct of the study did prove to be feasible but with caveats on the quality of the data and conclusions that could be made about effectiveness.

In 2015/16 the Commonwealth received over $9.4 Billion in tobacco excise into consolidated revenue (Commonwealth of Australia, 2016). With good evidence for targeted cessation practices for people with mental illness, it may be easier to convince governments to spend some of the estimated $4.7 billion in additional tobacco excise estimated to be generated from tobacco price

rises over the coming decade (Thomas, 2016) on targeted cessation programs for people with mental illness and placing additional NRT therapies on the PBS.

Limitations

As a small pilot study, there are several limitations that require us to exercise caution around the interpretation of results:

- The small numbers participating in the pilot means that the data do not support statistical analysis and we are therefore limited to descriptive results. Any differences reported between KTH and control sites, and changes over time within the two groups have been made subjectively based on the observation of relatively large differences/change in numbers. For more robust analysis, we would require a minimum of 100 participants in each of the groups.

- Not every consumer participated in all follow-ups meaning that some observed changes over six months could be influenced by the characteristics of those that completed the questionnaire each time versus those that did not; more so for the control group.

- The amount and type of individualised support received at sub-acute and community outreach sites differed. Whereas KTH was available for up to 4 weeks at the sub-acute sites, it was possible for consumers in community outreach settings to receive up to 6 months of support, although this varied and was dependent on the site.

- Related to this was the lack of data collection on program delivery itself e.g. number of support worker follow-ups, contact with GPs and other mental health professionals.

- Implementation of the pilot study was impacted by site changes during the study period. One site originally selected for KTH was not feasible after a change in management and staff, resulting in the selection of two further sites in early 2017. Additionally, three sites were taken over by another NGO (one KTH and two control sites) and Neami funding for these sites ceased at the end of October, 2017. Although support worker contact ceased, Neami were able to complete the research component for KTH (3 and 6-month follow-ups) at these sites. Changes in service provider and support workers may have influenced consumer outcomes for those whom Neami were able to follow-up.

- The KTH intervention was not strictly standardised and the intervention could be considered pragmatic. Sites differed in their capacity to adopt KTH when requested, and there was variability in staff training, materials and the length of time between staff training and the program launch. This is in addition to the variability noted in the preceding points.

Strengths

The study has many strengths.

- The study was made possible through a collaboration between researchers at the Telethon Kids Institute and leadership at Neami with a common interest in improving the lives of people living with severe mental illness by reducing their tobacco use and its associated costs to their health and finances.

- It has helped to overcome some of the common perceptions amongst mental health workers that people with mental illness don't want to change their smoking habits.

- Although numbers were too small for quantitative analysis, detailed feedback from site managers, research assistants and support workers has resulted in some clear directions about how to improve and refine the program into the future.

- The benefits of staff training and site involvement will not be lost.

Suggested improvements for integration into standard care at Neami

- Communicate to all staff the uniqueness of KTH compared to other smoking cessation programs as a way of building confidence in the ability of consumers to reduce or quit smoking. Communicating how this approach differs from past and general smoking cessation program approaches is essential to overcoming negative staff attitudes, stigma and resistance to change.

- Provide ongoing support and leadership: Participation numbers and feedback indicates that leadership is an important factor in engagement for workers and consumers. Sites with managers and/or KTH champions who were enthusiastic about KTH and proactive in supporting staff found motivation to promote the program increased. This highlights the importance of a change management process that properly supports all levels of staff to connect with the rationale, build skills and workshop issues as they arise.

- Provide the right training at the right time:
  - Offer timely training relative to program implementation. Regular support and check-ins through a site champion helps to maintain momentum, accountability and problem solve creative ways to offer support to consumers.
  - More practical hands-on training for staff to help with starting the conversation and completing the TMP (e.g. role plays, workshopping issues and practice creating TMPs). An online library of resources. Make KTH standard training for all new staff.

- Emphasise Harm Minimisation: Change the emphasis from smoking cessation (as indicated by the program name 'Kick the Habit') to one that incorporates all stages of readiness to change. This would serve to widen the reach to all smokers in contact with Neami by giving them the opportunity to talk about and learn about smoking even if they're not ready to change.

- Tailor KTH differently for sub-acute sites so it can be delivered effectively in the 4-week period. Several participants who consented to participate at the sub-acute site withdrew because they were discharged before the program started.

- Formalising the TMP in way that requires staff to review and record against periodically, which should in turn should create greater staff accountability and keep the conversation going with consumers. This will also provide a means to accurately record the intensity and length of follow up support provided to each consumer, together with an accurate record of NRT dispensed by Neami, or purchased independently by the consumer.

- Offer a greater variety of free NRT offered for a longer period. Create partnerships with local pharmacies to help achieve this. Ideally, this would be in combination with an expanded range of NRT available at a subsidised cost by the PBS.

- Modify the questionnaires based on limitations noted in the Technical Report. Complete these questionnaires in person if possible and link in with support visits.

- Encourage staff smokers to participate in KTH alongside consumers.

Where to next?

- Dissemination of findings

    - Share qualitative report with Neami Health Promotions Officers, Service Development Team and Site Managers.

    - Develop journal article to share the findings of the study

- Embed data collection
  Review and standardise how smoking data is captured in Carelink across Neami support services.

- Funding of NRT
  Explore state based opportunities to fund NRT for consumers e.g. Government funding, collaboration with Quit/Cancer Council.

- Modification to program and research design as listed above under suggested improvements

- Integrate training
  Implement a national approach to training all staff in smoking cessation support and embed KTH in everyday practice. Develop resources to support consumers and staff.

- Look for opportunities to embed in practice.

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Attachments

Attachment 1: Tobacco Dependence Assessment Form

Attachment 2: Tobacco Management Plan (template)

Attachment 3: Participant information and consent forms

Attachment 4: Participant questionnaires

Attachment 5: End of Program Questionnaire (staff)

Contact research@neaminational.org.au **if you require a copy of the above attachments.**