

# Give up the smokes: a smoking cessation program for Indigenous Australians

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## Abstract

The Mid North Coast Division of General Practice (MNCDGP) has run free intensive smoking cessation group programs for 10 years on the Mid North Coast NSW. Indigenous Australians rarely attend this program despite Indigenous people in this area having the highest prevalence of smoking in NSW (59.5%).

In 2005 the MNCDGP was approached by a local Aboriginal Medical Service, Galambila, to develop a smoking cessation program for its clients. The Give Up The Smokes program was adapted from the existing Quit for CATS (Chronically Addicted Tobacco Smokers) program by Dr Gillian Gould and Tyan King, an Aboriginal Vascular Health Worker. Indigenous art work was commissioned for the course as a basis for interactive activities.

This study evaluates two Give Up The Smokes programs run at Aboriginal Community Controlled Medical Services in two rural areas on the Mid North Coast in 2007-2008 alongside four Quit for CATS courses in the same two areas. Demographic features, pre-quit behaviours and quit rates were ascertained and compared.

This is the first occasion, as far as we know, that a culturally-appropriate group smoking cessation program has been evaluated for Indigenous Australians. While sample sizes were small, the pilot data reported here suggest that the culturally appropriate program, Give Up The Smokes was at least as effective for the Indigenous participants with a 30% quit rate as the CATS course was for non-Indigenous participants with a 25% quit rate at 6 month follow up. Discussion points to future work to further develop and validate the program, and describes immediate issues associated with the sustainability of the program.

Ethics approval was obtained from ethics committees of the Aboriginal Health and Medical Research Council of NSW and UNSW. The researchers gratefully acknowledge funding from an Indigenous Health award from the RACGP Research Foundation and the Australian Primary Health Care Research Institute.

## Introduction

Indigenous people have the worst health of any group in Australia, experiencing a 17 year lower life expectancy than all Australians and smoking has been reported as the most significant cause of their increased morbidity and mortality [1]. While the prevalence of smoking in the general population has decreased from 49% in 1945 [2] to 17.8% in 2004-5 [3], prevalence in the Indigenous population was 50% in 2004-5 [4] and has remained so over the last 10 years [5]. The North Coast of NSW has the highest Indigenous smoking levels within NSW with a prevalence of 59.5% [6]. As a consequence, tobacco-related disease is higher in this population than the rest of the Australian population [1, 7].

Tobacco smoking is associated with socio-economic disadvantage in this population [7] and Indigenous smokers have higher rates of psychological distress and depression [8].

Despite the link with morbidity and mortality, the high prevalence of Indigenous smoking has received little attention [9]. Indigenous tobacco control has been characterised by limited program delivery and minimal formal evaluation of interventions [10]. The majority of investigations have focused around brief intervention or community-based approaches. There has until now, been no evaluation of a culturally-appropriate smoking cessation program despite being stressed by the Centre for Excellence in Indigenous Tobacco Control (CEITC) as an area of importance [11]. Group programs appear a valid area of study given the positive results in the mainstream population. A Cochrane Review of 55 trials of group behaviour therapy programs found increased cessation rates compared to self-help or no intervention [12]. A recent UK study found group treatment to be more effective than individual treatment (30% quit rate compared to 19%) [13]. However understanding the historical, cultural and political aspects of Indigenous smoking is essential to developing an appropriate cessation program [14].

## Background

Since 1998 the Mid North Coast Division of General Practice (MNCDGP) has run a smoking cessation program; Quit for CATS (Chronically Addicted Tobacco Smokers) developed by local GP, Dr Jamie Duff. Since then a total of 51 courses with 687 participants have run across the Mid North Coast area. However, few Indigenous people were accessing CATS thus a culturally-targeted program was deemed necessary.

Give Up The Smokes (GUTS) is a culturally-appropriate intensive smoking cessation program for Indigenous tobacco users developed by the MNCDGP and Galambila Aboriginal Medical Service. It was adapted from Quit for CATS by a working party consisting of the first author (a General Practitioner and director of the Quit for CATS program) and an AHW (Tyan King). The Aboriginal Community Controlled Medical Service (ACCMS) and AHWs were involved at every stage during development and research as recommended by CEITC [11]. The development of GUTS was funded by the Cancer Institute NSW and Alliance of NSW Divisions.

Both courses closely follow the same format of one 3-hour session per week for 3 weeks, presented by a GP and appropriate health advisor. The sessions cover a range of evidence-based interventions and core areas include motivation to quit, pharmacotherapies, behaviour modification and stress management. Additional topics included in the Indigenous course are the Indigenous history of tobacco use, prevalence and health effects of smoking in Indigenous people. Both courses do not enforce a quit date, but encourage participants to set their own. The visual content was increased for GUTS to accommodate possible low levels of literacy, for example artwork commissioned from a local Aboriginal artist was used in an interactive activity. Eight weeks of Nicotine Replacement Therapy (NRT) was provided to GUTS participants, as being from a lower socio-economic background they would be unlikely to access NRT unless it was provided [15]. CATS participants were offered NRT samples but had to purchase their own supplies should they wish to use this.

The inaugural course, piloted at Galambila, in 2006 was received favourably by participating Indigenous smokers. This study commenced in 2007 in collaboration with two ACCMS on the mid North Coast NSW, the University of New South Wales, Rural Clinical School, Coffs Harbour, and the MNCDGP. The study received ethics approval from both the Aboriginal Health & Medical Research Council and UNSW Human Research Ethics Committee.

The two courses are compared for quit rates. It is expected that GUTS is a suitable program for supporting Indigenous smokers to quit. This study aims to start to fill the gap in knowledge by testing the effectiveness of culturally-appropriate group smoking cessation programs.

## Method

### Recruitment

Recruitment into the programs was through self selection or referral from health professionals or service agencies. Local General Practitioners and AHWs are informed of the course via an information letter and issued referral pads. Referrals given to patients include a contact phone number for registration with the local ACCMS or MNCDGP. The courses are advertised through posters at the local ACCMS and GP surgeries, other Aboriginal agencies and advertisements in local papers. The majority of GUTS participants were referred through an AHW (60%).

### Sample and setting

Participants from two GUTS programs at ACCMS in May 2007 (area 1) and September 2008 (area 2) were included in the study. Four CATS courses were included: one in area 1 and three in area 2 from March 2007 – August 2008. Both courses were open to Indigenous and non-Indigenous participants.

### Data collection

On attending the course participants were provided with written and verbal information about the nature of the study and asked to give informed consent.

Data was collected through questionnaires at the beginning of the first day of the program, at the end of the last day and at 6 months from the end of the program. Expired Carbon Monoxide (CO) readings were attempted at questionnaire dates although this was not always possible.

The first day and last day questionnaires were completed by the participants while at the program. The subsequent questionnaire was completed by telephone interview for CATS participants and face-to-face for GUTS participants, although this was not always possible.

CO readings were taken using a Bedfont® calibrated smokelyser and recorded in parts per million (ppm). Levels of <10ppm were considered a non-smoker level and used to confirm self-reported smoking cessation [16].

## Results

Of the 93 participants in this study 15 undertook the GUTS program and 78 the CATS program. Of those undertaking GUTS, 10 were Indigenous, 4 identified as non-Indigenous and 1 abstained from answering. Non-Indigenous participants were mostly in close relationships with Indigenous people. One Indigenous participant was included in the CATS sample. The difference in sample sizes makes parametric statistical comparisons difficult and the following analyses are reported with that in mind. Unless stated otherwise, data are reported as proportions of each group.

### Demographic characteristics of participants

The ages and genders of participants in both programs are shown in Tables 1 and 2 respectively. Participants in both programs were symmetrically distributed about 45 years, with those undertaking

GUTS more often a little younger. Genders were evenly distributed in both programs. It seems unlikely differences in outcomes between the programs could be attributed to either of these variables, although it is difficult to say this with these numbers.

**Table 1** Ages of participants

Age group (years)	<25	25-34	35-44	45-54	55-64	65-74	>75
Percentage of GUTS (%)	13	13	33	27	13	0	0
Percentage of CATS (%)	1	9	26	29	24	1	0

Data are represented as proportions of the numbers of participants in each program.

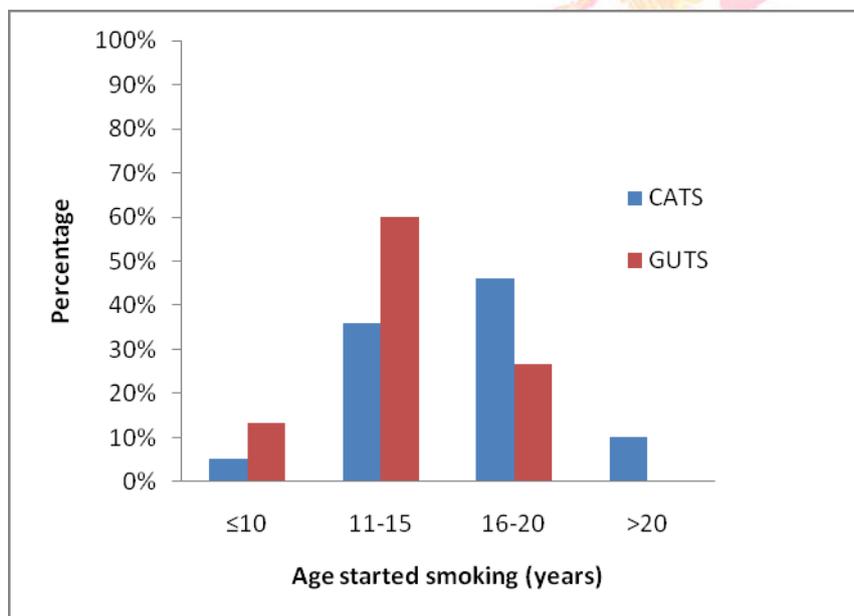
**Table 2** Genders of participants

Gender	Male	Female
Percentage of GUTS (%)	47	53
Percentage of CATS (%)	49	51

Data are represented as proportions of the numbers of participants in each program.

Perhaps more interesting are the ages at which participants started smoking. As Figure 1 illustrates, the distributions, across each program, show GUTS participants generally began smoking earlier than those in CATS. Indeed, 73% (11/15) of those undertaking GUTS initiated smoking before they were 15 years old. Only 41% (32/78) of those undertaking CATS were smoking by the same age. That difference is important because evidence shows smokers have more difficulty quitting when they start smoking earlier [17, 18].

**Figure 1** Ages at which participants started smoking



Data are represented as proportions of the numbers of participants in each program.

Environmental factors can impact on smoking cessation, for example living alone or living with other smokers both detrimentally affect a smoker's likelihood of success [19]. Of all those participants living

in households with others, nearly 46% (5/11) of GUTS participants lived in households in which everyone else smoked while only 13% (8/62) of CATS participants lived exclusively with other smokers. Smoking outside is considered an important strategy for those attempting to quit and only 33% of GUTS participants lived in households where smokers only smoke outside, compared to 45% of CATS participants. So, in summary, the early age of smoking onset combined with prevalence of smoking in their home environment suggest that participants in the GUTS program would find it more challenging to quit than those in the CATS program.

### Pre-quit behaviours

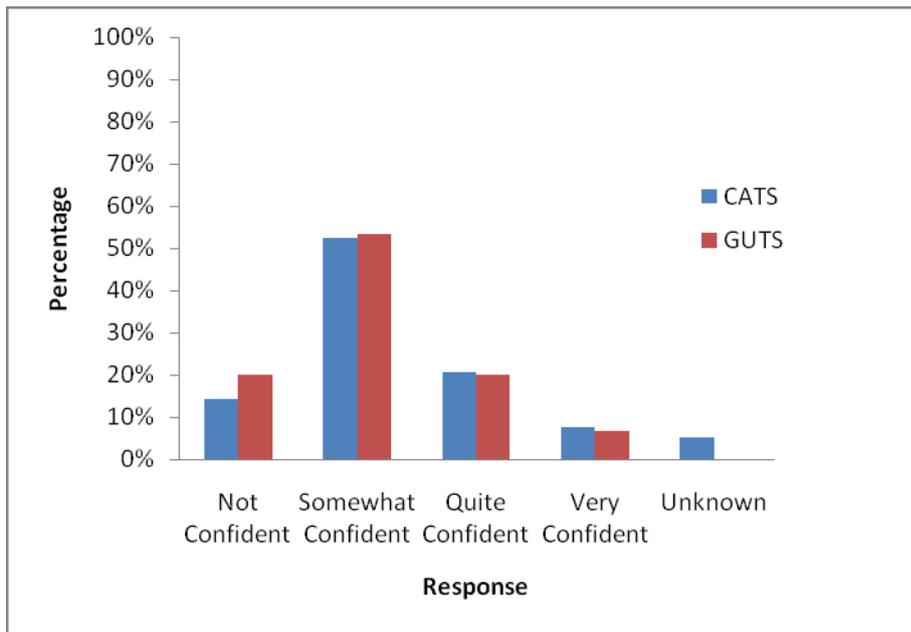
With those observations in mind we examined the pre-quit behaviours of both sets of participants. There seemed no real differences between the two sets of participants in terms of the numbers of cigarettes being smoked each day. 87% (13/15) GUTS participants and 85% (66/78) CATS report smoking 15 or more cigarettes per day which is considered a significant predictor for failure in cessation attempts [18]. Therefore, the numbers of cigarettes being smoked by each group are unlikely to account for any differences in outcomes, but with so few participants it is difficult to be certain.

There was a difference in the numbers of previous quit attempts made by participants in each group. 46% (7/15) of those undertaking the GUTS program had made two or fewer previous attempts to give up smoking, although 26% (20/78) of participants in the CATS program had made two or less previous attempts. In both courses only 2 participants had never previously tried to quit smoking. Of the remainder of participants undertaking GUTS, 53% (8/15) reported 3-5 previous attempts to quit, however in the CATS course 38% (30/78) reported 3-5 quit attempts and 36% (28/78) reported making more than 5 previous quit attempts.

Despite those differences, individuals in both groups were similar in reports of their readiness to quit and confidence in their ability to quit. Encouragingly, 73% (11/15) of GUTS participants and 63% (49/78) of CATS participants reported being ready to quit at the beginning of the study. Figure 2 illustrates the confidence ratings of both groups of participants and illustrates that both sets of participants were similarly distributed across the range of confidence ratings. Most participants in both groups had some confidence they would be successful, with modal ratings of confidence positive but low (80% of GUTS participants were in the range somewhat confident to very confident; 82% of CATS participants were in the same range).

In summary, at the beginning of the treatment programs both sets of participants were smoking at similar rates. The data suggest both sets of participants were similarly ready to quit and similarly confident in their ability to do so. The only difference in this set of measures were the numbers of participants who had previously made attempts to quit: only half of those undertaking the GUTS program had made more than two attempts to give up smoking compared to three-quarters of the CATS participants. Together these data suggest that any differences in program outcomes cannot be attributed to rates of smoking or to readiness or confidence. As there is research indicating that the likelihood of success in quitting increases with the number of previous quit attempts [18] those in the CATS program might be more likely to be successful if the two programs are equally effective at facilitating quitting.

**Figure 2 Ratings of individuals' confidences in their ability to quit smoking at the beginning of the programs**



Data are represented as proportions of the numbers of participants in each program.

### Immediate outcomes

Of those starting each course 53% (8/15) completed the GUTS course and 52% (40/78) completed CATS. At the end of the last session of both courses participants were assessed for their current smoking behaviour.

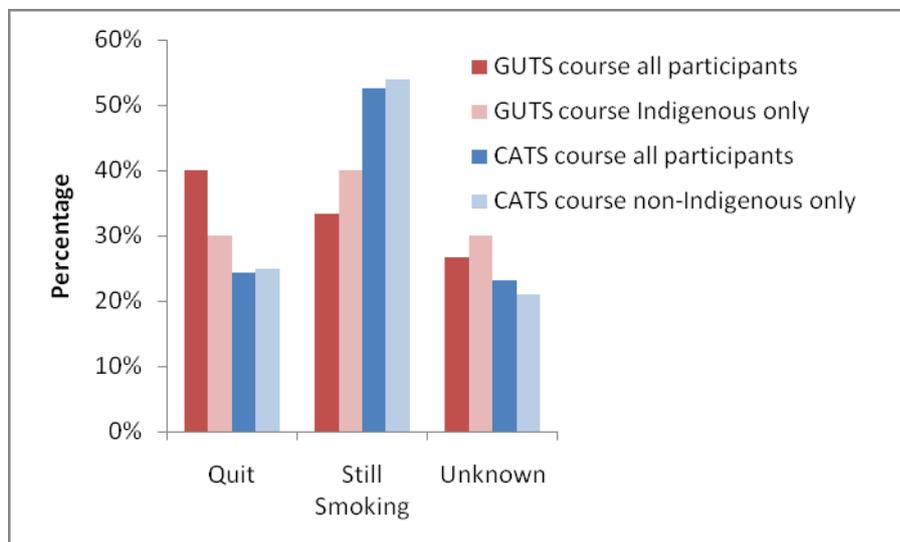
Of all those who completed the GUTS course 75% (6/8) attempted to quit and, of those, one third (2/6) were validated abstinent by the end of the course: both recorded a CO of 0ppm. Similarly, of those completing the CATS course 70% (28/40) attempted to quit and almost half (13/28) were self-reported abstinent. 2 GUTS participants (25%), successfully using pre-quit NRT, were smoking less than 5 cigarettes per day and had reduced their CO to below 10 ppm. 2 participants in the GUTS course (25%) and 12 (30%) of those completing the CATS course did not make an attempt to quit. While the proportions of quit attempts and success across the two programs are similar, suggesting perhaps that the two courses are similarly useful as mechanisms for eliciting quit behaviours in participants, one must keep in mind that those participating in the GUTS course were exhibiting behaviours and were living in environments that would make their successful quitting less likely than CATS participants.

### Longitudinal follow-up

A final evaluation of the outcomes of both courses was made as a 6-month follow-up. As Figure 3 illustrates, just as both courses were similar in their immediate outcomes, both had similar self-reported abstinence rates after 6 months. Proportions shown in Figure 3 are calculated as a function of participants attending each course and show, separately, proportions of quitters and smokers for all participants in each course (darker columns) and proportions of Indigenous quitters and smokers in the GUTS course (light red column) and non-Indigenous quitters and smokers in the CATS (light blue column). While it is difficult to state conclusively, due to the very small numbers of participants completing the 6-month follow-up, these data again suggest the GUTS course was at least as successful for the Indigenous participants with a 30% quit rate (3/10) as the CATS course was for non-

Indigenous participants with a 25% quit rate (19/76). The course may perhaps be more successful when applied to the mixed participants with a 40% quit rate (6/15) for GUTS compared to a 24% quit rate (19/78) for CATS.

**Figure 3 Cessation and smoking rates six months after the course**



GUTS rates are shown in red, CATS in blue. Darker columns represent the entire course. Lighter columns are rates for the target groups: Indigenous participants for the GUTS course, non-Indigenous participants for the CATS course.

## Discussion

The objective of this study was to test the outcomes of a culturally-appropriate intensive group intervention for Indigenous Australians with the hope that we will begin to fill the gap of knowledge in this area. A locally developed Indigenous course was compared to a standard course for quit rates. The Indigenous course proved to be at least as effective as the non-Indigenous course despite the participants of the Indigenous course exhibiting more factors predicting difficulty in successful smoking cessation.

In general the GUTS participants compared with CATS participants initiated smoking at a younger age, had less previous quit attempts and were a slightly younger age when attending the course. They were also more likely to exclusively live with other smokers or live alone and less likely to live in smoke-free households. These factors all contribute to decreasing the chance of success in smoking cessation. Courses are a very suitable method of delivery for these hard-to-treat smokers, who require more intensive levels of intervention and support [20, 21].

Local experience shows that Indigenous smokers do not access available mainstream courses. This has also been found in previous studies and perceived barriers for accessing mainstream services may include language difficulties or even racism [14]. This culturally-appropriate course effectively supported quit attempts.

The quit rate shown by the GUTS course is a promising result particularly after 6 months. The GUTS program proves to be an effective support in assisting Indigenous smokers to quit. This result is comparable with mainstream international literature with a reported 30% quit rate [13] and outstrips Australian research on group quit programs in special populations with a 9.5% quit rate at 6 months

[23]. The difference in quit rate between the CATS and GUTS group may be due to the provision of free NRT to those attending the GUTS course.

The main limitation of this study was the small number of participants. This may reflect the infancy of the GUTS program which was only developed in 2006. The CATS course showed similar small attendance in its initial years although as the course has progressed increasing numbers are attending (an average attendance of 6 participants per course in 1999-2000 to 27 per course in 2008). It is clear that this is a pilot study and the intention is to report trends not complete a statistical analysis. If the GUTS course is able to be continued attendance would be expected to increase as the course gains acceptance and a more detailed analysis may be possible.

Data collection was difficult for the course held through one of the ACCMS. Distance and communication issues meant that data was not collected using the questionnaires developed but rather by taped interviews with the AHW. This limited the analysis of data for 6 month follow up. It was an endeavour of the study to include AHW at all stages of the program however the AHWs had limited training in research technique and data collection. This limitation could be overcome by more extensive briefing and support or by a funded research assistant working alongside the AHW.

CO validation was also a missed opportunity to confirm abstinence at 6 month follow up for GUTS and in the CATS course it was impractical during sessions because of the large number of participants and when follow up was conducted by telephone.

## Recommendations

Following the success of the GUTS course others aiming to develop a culturally-appropriate smoking cessation courses should include evidence-based approaches, discussion about the Indigenous history of tobacco use, targeted information about prevalence of smoking and the health and other effects of smoking in Indigenous smokers. The authors recommend the program to have a high level of interactive and visually stimulating activities. Detailed information about pharmacotherapies is essential, as is the provision of free NRT. The continuation of the GUTS course on the North Coast is important to build the capacity of the local ACCMS to deliver their own courses however sustainability depends on continued funding. Currently a training model is being explored locally with the co-developer, Galambila AMS, which will involve both AHWs and GPs who work at the service, so they would be fully equipped to deliver and evaluate their own programs. The GUTS program could also be promoted for use in other regional areas, by further developing this training model, so that local ACCMSs can conduct their own courses. This would also need to be supported by funding.

## Conclusion

Smoking cessation interventions are essential as part of the strategy to bridge the gap in Indigenous health. This is especially relevant to the North Coast, which has the highest prevalence of Indigenous smokers in NSW. It is important to change the culture around smoking from one of being the norm in Indigenous communities to one which demonstrates successful smoking cessation. Give Up The Smokes is an effective intervention but mechanisms to ensure the program is sustainable are an urgent priority.

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## Presenters

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**Amy McGechan** is a fourth year medical student studying through the University of New South Wales, Coffs Harbour Rural Clinical School. She has just completed an independent learning project evaluating group smoking cessation programs on the mid-north Coast. She has a keen interest in both rural and Indigenous health.