



## **Effectiveness of the Committed Smoking Cessation Clinic producing an excellent result in the smoking cessation rate**

### **Eficácia da Clínica de Cessação do Tabagismo Comprometida produzindo um excelente resultado na taxa de abandono do tabagismo**

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#### **ABSTRACT**

The tobacco epidemic is one of the biggest public health threats the world has ever faced. Morbidity and mortality related to smoking is a major public health challenge worldwide. Quitting smoking at any age is beneficial. The 'O- Offer help to quit tobacco use' component of the MPOWER strategy is implemented through active smoking cessation clinics conducted in government health clinics in Malaysia. The National Quit Smoking Program has set a target of achieving quit smoking cessation rate of > 30% as a key performance indicator. Thus, committed smoking cessation clinic must be carried out in every government health clinic actively, to ensure good quit smoking rate outcome.

**Keywords:** Committed smoking cessation clinic, Quit smoking rate, Counseling and medication.

#### **1 INTRODUCTION**

Tobacco use is the single greatest preventable cause of death in the world today and the World Health Organization has demonstrated that tobacco use is a contributing risk factor for 6 of the 8 leading causes of death, worldwide<sup>1</sup>. The projected global tobacco-caused deaths are mainly neoplasms (33%), followed by respiratory diseases (29%), cardiovascular diseases (29%) and others (8%). In Malaysia, smoking kills 20,000 Malaysians every year and will increase to 30,000 by the year 2020 if the pattern of smoking does not change.<sup>2</sup>

Malaysia is committed to achieve its WHO Global NCD Target 2025, which is to reduce national smoking prevalence by 30% from the baseline in 2011. There are two main strategies to achieve this, which are to reduce smoking initiation among youths and to help existing smokers to beat their nicotine addiction. A National Strategic Plan on Tobacco Control has been developed



by the Ministry of Health in 2015, incorporating the MPOWER strategy for co-ordinating tobacco in Malaysia.<sup>3</sup> Strengthening tobacco cessation services is given priority, with development of a standardised services across the public and private practices.

Malaysia is a party to the WHO Framework Convention on Tobacco Control (WHO FCTC) since its enforcement in September 2005. Strengthening tobacco cessation is core to the 'O - Offer help to quit tobacco use' component of the MPOWER strategy of the WHO FCTC which is implemented through dedicated smoking cessation clinics conducted in the government health clinics in Malaysia.<sup>4</sup>

Nicotine is highly addictive and some researchers have placed nicotine dependence as comparable to the dependence caused by opiates, cocaine, or other illicit drugs.<sup>5</sup> Effective pharmacologic and counselling strategies are now the pillars of tobacco cessation programmes, and taken in combination can achieve the highest rates of smoking cessation.<sup>6</sup> Pharmacotherapy for smoking cessation aims primarily to reduce the intensity of urges to smoke and/or ameliorate the aversive symptoms while counselling or behavioural support aims to boost or support motivation to resist the urge to smoke and develop people's capacity to implement their plans to avoid smoking.<sup>7</sup>

Most smokers believe that stopping smoking is purely a matter of willpower and remain unaware of effective treatments to promote quitting. It is important that health care providers whom often treat smokers to be familiar with available therapies to educate patients of their options for smoking cessation.<sup>8</sup>

The National Quit Smoking Program has set a target of achieving quit smoking cessation rate of > 30% as a key performance indicator. This has been the motivation and drive for Buntong Health Clinic to aim to achieve this target which has been set nationwide. This study was a retrospective review of a cohort of all patients recruited in the Quit Smoking Program in Buntong Health Clinic from 2016-2017, a period of 2 years.

## **2 OBJECTIVES**

The primary objectives of this study was to determine the quit rate achieved over the past 2 years. The secondary objectives were to look at the various methods used to assist smokers to achieve their quite rate and the associated factors leading to the quit rate achieved in the clinic studied.



### 3 METHODOLOGY

All patients recruited and followed up for a period of minimum of 6 months from January 2016 until December 2017 were included in this study. Patients were given non-pharmacological treatment which included counselling by a trained doctor and/or pharmacist and pharmacological treatment which included nicotine replacement therapy (NRT); nicotine gums 2mg and 4mg, and non-nicotine replacement therapy (non-NRT); Varenicline. All patients were followed up for a minimum period of 6 months based on a proper schedule which included weekly follow-up for the first month, then 2 weekly follow-up for the second and third month, then monthly follow-up for the fourth, fifth and sixth month; giving a total of a minimum of 11 visits altogether.

All patients were seen by the smoking cessation team members which included a family medicine specialist, trained medical officer, pharmacist and nurse. All patients were screened for any co-morbidities by eliciting a complete history and performing a complete physical examination especially during the first clinic visit, followed by chest X-ray, electrocardiogram as well as basic blood investigations which included fasting blood sugar, lipid profile, renal profile and liver function test. All patients were also interviewed using the Modified Fagerström Test for Cigarette Dependence Questionnaire to assess the patients' level of addiction. They also all had a Carbon Monoxide (CO) Analyser<sup>9</sup> test done which was also used to objectively assess the patients' level of addiction.

After these assessments were done, all these patients were given a form of treatment; either pharmacological or non-pharmacological, and were followed up dedicatedly according to the schedule mentioned above. Their smoking cessation status were evaluated and recorded at the end of 6 months. If a particular patient had not quit after 6 months, treatment was continued and patient was followed up for longer period and reassessed as well as re-evaluated. Consent was obtained from the Medical Research Ethics Committee (MREC) through the National Medical Research Register (NMRR) to conduct this research (NMRR-18-314-40321). All patients' personal information collected data were kept secure and confidential and can only be accessed by the investigators. The data collected was handled in accordance with the legislation and regulations.

### 4 RESULTS

A total of 65 patients were recruited and followed up from January 2016 until December 2017; 31 patients in 2016 and 34 patients in 2017 respectively. Mean age of patients was  $45.52 \pm 13.99$  years. Majority of patients were males, 62 (95.4%), Indians, 37 (56.9%), married, 50 (76.9%), had primary and secondary school education level, 58 (89.2%), self-employed, 28

(43.1%), had underlying co-morbidities such as hypertension and hyperlipidaemia, 51 (78.5%), had previous quit attempts, 56 (86.2%), smoked more than 20 sticks per day, 37 (43.5%), had moderate and high level of addiction with Fagerstrom Score of 4 and more, 45 (69.2%) and carbon monoxide (CO) in expired breath air level of 7 and more, 51 (78.5%), as shown in Table 1.

Out of 65 patients, 42 managed to quit successfully from the dedicated smoking cessation programme conducted, giving a successful quit rate of 65%. Out of those who managed to quit, 25 (59.5%) patients quit using counseling and Varenicline therapy (non-NRT), 7 (16.3%) patients used counseling and nicotine gums (NRT), 4 (9.5%) patients used combination of NRT and non-NRT with counseling and 6 (14.3%) patients quit through counseling therapy alone, as shown in Figure 1. Among those who failed to quit, 23 patients, highest method used was counseling alone, 10 (43.5%), followed by counseling with NRT, 7 (30.4%) and counseling with Varenicline, 4 (17.4%), as shown in Figure 2. Majority of those who failed to quit (21 of them, 91.3%) defaulted their appointments given and didn't complete the entire clinic attendance of 11 times. Only 2 patients came throughout, were given combination treatment and still failed to quit. When compared success between the different modalities of treatment given, highest was amongst those with counselling & Varenicline, 86%, followed by combination treatment, counselling & NRT and lastly counselling alone. There was a significant difference found in method used for smoking cessation. Method using medications together with counseling were found to be more effective than counseling alone. (\*p= 0.004; Fisher's Exact test) (Figure 3)

Among all who successfully quit, there was a marked decline in Fagestrom score from pre-treatment, to 3 months and 6 months for all treatment modalities. (Figure 4). CO analyser score also showed similar findings of marked decline amongst all modalities of treatment; per-treatment, 3 months and 6 months. (Figure 5)

Table 1

SOCIO-DEMOGRAPHIC CHARACTERISTICS		TOTAL RESPONDENTS (N=65) N (%)
Mean Age ± SD (years)		45.52 ± 13.99
Gender	Female	3 (4.6)
	Male	62 (95.4)
Ethnicity	Malay	6 (9.2)
	Chinese	22 (33.9)
	Indian	37 (56.9)
	Others	0 (0.0)
Marital Status	Married	14 (21.6)
	Divorced/Separated/ Widow/Widower	50 (76.9)
		1 (1.5)



Education Level	No formal education	2 (3.1)
	Primary	27 (41.5)
	Secondary	31 (47.7)
	Tertiary	5 (7.7)
Employment Status	Government sector	8 (12.3)
	Private sector	16 (24.6)
	Self-employed	28 (43.1)
	Unemployed	3 (4.6)
	Retiree	8 (12.3)
	Student	2 (3.1)
Co-morbidities	Diabetes Mellitus	8 (12.3)
	Hypertension	24 (36.9)
	Hyperlipidaemia	27 (41.5)
	Cardiovascular disease	7 (10.8)
Previous quit attempts	Yes	56 (86.2)
	No	9 (13.8)
Number of cigarette sticks per day (Initial visit)	< 10	10 (15.4)
	11-20	18 (27.7)
	21-30	23 (35.4)
	> 30	14 (21.5)
Fagestrom Score (Initial visit)	0-3	20 (30.8)
	4-6	24(36.9)
	7-10	21 (32.3)
Carbon Monoxide (CO) reading (Initial visit)	1-6	14 (21.5)
	7-10	17 (26.2)
	11-20	21 (32.3)
	> 20	13 (20.0)

Figure 1

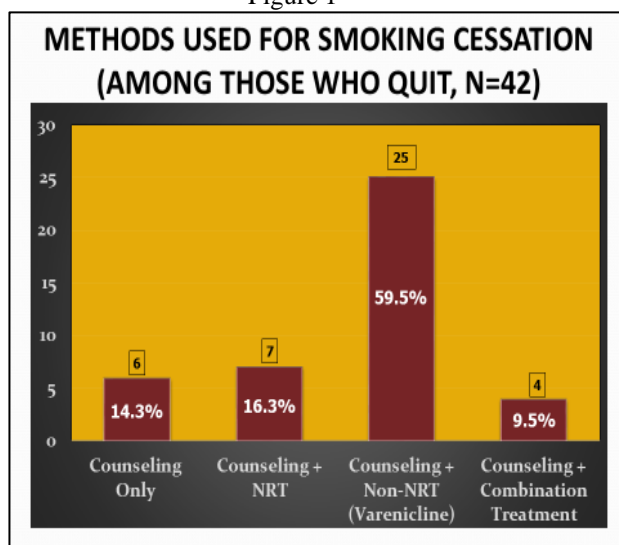


Figure 2

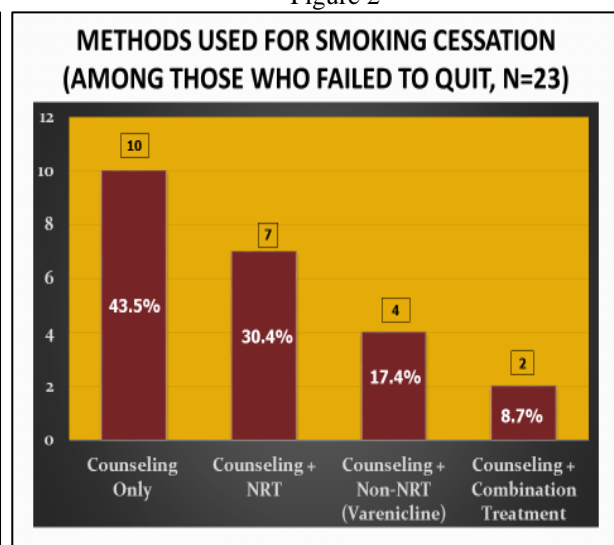


Figure 3

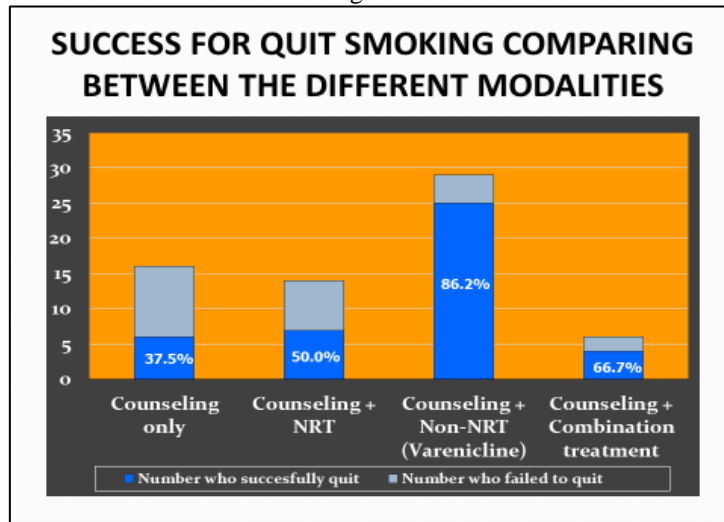


Figure 4

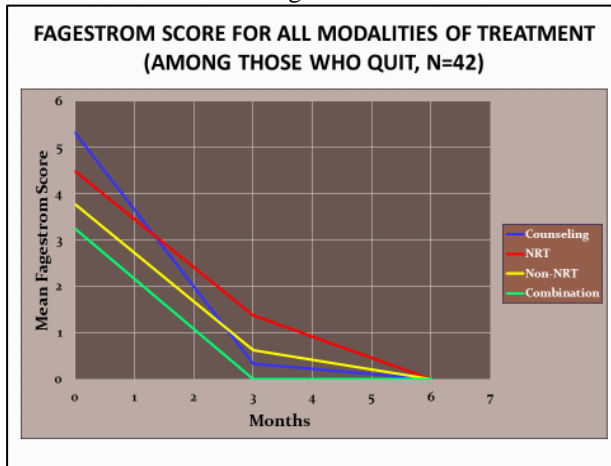
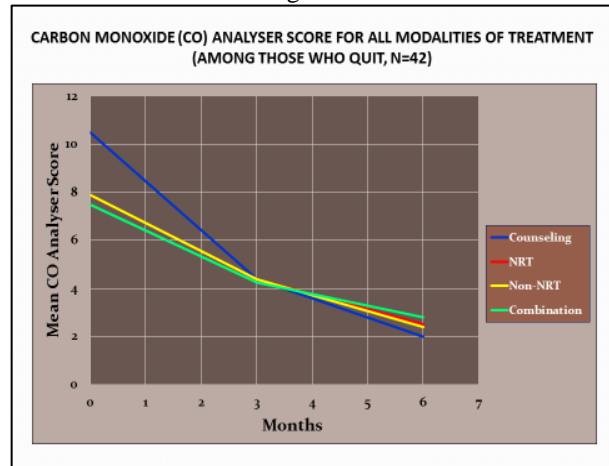


Figure 5



## 5 DISCUSSION

Although the sample size for this study may not be very large, the quit rate achieved is quite remarkable and definitely achieved beyond the target set nationwide which was 30%. The strength of this study is that universal sampling method was used which provides a fair representation of patients without selection biasness. Our limitations however were, this study was conducted in a single center and it was of retrospective in nature. It is not easy to get patients to remain in the programme unless they are totally motivated and truly want to quit smoking.

The key factor for this successful quit rate is having a very good, dedicated and motivated team which included a family medicine specialist, trained medical officer, pharmacist and nurse. All of the patients were continuously reminded to come for their follow-up visits on specific clinic operating days by the nurse in this team. All patients were counseled very well and thoroughly on



all aspects of smoking cessation, using motivational interviewing techniques as well as using models, flip charts, posters as well as powerpoint presentations prepared to educate these patients.

All patients were taught on anticipated withdrawal symptoms and practical methods used to overcome these symptoms which made all these patients more prepared and at ease throughout their battle on achieving smoking cessation. Continuous and uninterrupted pharmacological treatment supplies were always present for all these patients which was another key factor which enabled the majority of patients who used pharmacological treatment (85.7%) to be able to totally quit smoking successfully.

## **6 CONCLUSION**

Smoking cessation clinic is a very challenging clinic to handle and manage. Nevertheless, it is definitely possible to do so with a committed and dedicated trained team.<sup>10, 11</sup> Patients must be truly motivated to continue to remain in the programme. Availability of a CO analyser is also of great use in helping team members to objectively assess patients' level of addiction which will then aid in deciding the best mode of treatment for the individual patient. The availability of pharmacological treatment is also another key factor in helping to achieve and sustain high and successful quit rates in the government health clinics.

## **7 RECOMMENDATIONS**

Committed smoking cessation clinic must be carried out in every government health clinic actively. Adequate pharmacological treatment should be available for the implementation of successful smoking cessation programme. Future prospective cohort studies and qualitative studies with focus group discussions and in-depth interviews could be conducted to explore further on why smokers default visits, if they have problems with medications as well as experiencing any difficulties to come for appointments.





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