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EVALUATION OF SUCCESS RATE OF INPATIENT SMOKING CESSATION PROGRAMME IN TAN TOCK SENG HOSPITAL

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Introduction

Smoking is well known for its health implications and it continues to be on an increasing trend in recent years. Smoking also brings about many undesirable consequences in terms of health, financial and social impacts.

Studies have shown that those who received physician advice tend to have longer abstinence rates as compared to those who did not. Furthermore, efforts to promote smoking cessation have been shown to improve abstinence rates. Tan Tock Seng Hospital (TTSH) is one of the hospitals in Singapore to provide such services in the hope to promote better health outcomes arising from smoking cessation.

Objective

Primary objective: To evaluate the 6-month quit rate of the inpatient smoking cessation programme in TTSH.

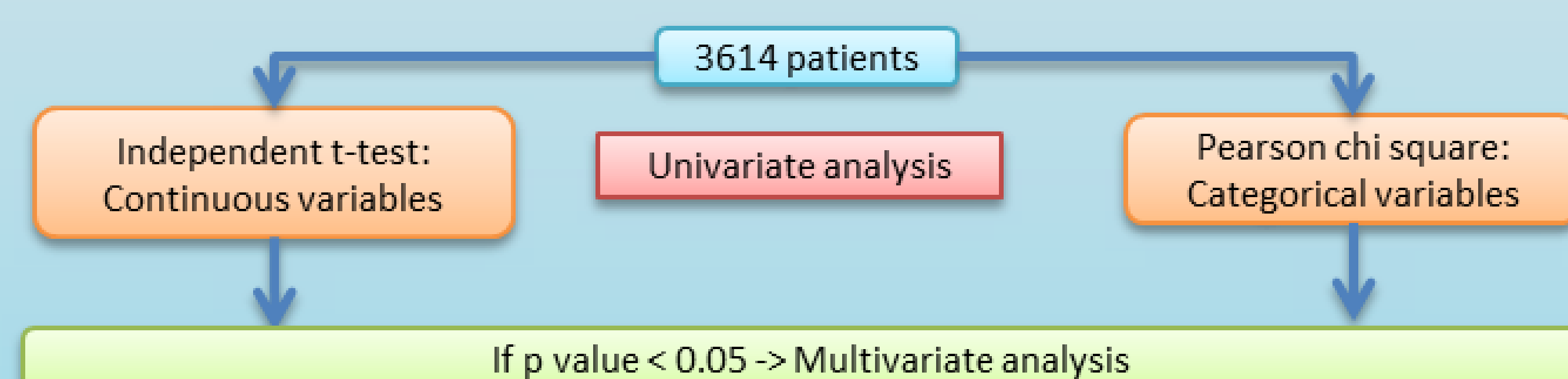
Secondary objective: To investigate the possible factors that affect the quit rate.

Methods

Retrospective, non-randomised & non-blinded study.

Subjects: 3614 patients in the inpatient setting from various ward disciplines.

Time Frame: 1st December 2008 – 31st December 2013.



Results

Quit rate	3 months : 22.4 %	6 months: 20.6 %	12 months: 17.7 %
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Table 1: Quit rate at 3, 6 & 12 months

Factors	3 mths	6 mths	12 mths
Age	*		
Ethnicity (Table 3)	✓	✓	✓
Gender			
Occupation	*		*
Education (Table 4)		✓	✓
Ward discipline (Table 5)	✓	✓	✓
Marital status (Table 6)	✓	✓	✓
Years of Smoking			
Nicotine Dependent Score (NDS) (Table 7)	✓	✓	*
No. of quit attempts			
No. of treatment types			
Types of treatment received (Table 8)	✓	✓	✓
No. of sticks smoked/day (Table 9)	*	✓	*

Table 2: Possible factors that affect smoking cessation rate (legend below)

	Significant for univariate analysis	Significant for multivariate analysis
	No	No
*	Yes	No
✓	Yes	Yes

	3 months		6 months		12 months	
	adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value
Ethnic						
Chinese	1 (reference)		1		1	
Indian	0.481(0.345-0.670)	<.001	0.530(0.377-0.745)	<.001	0.391(0.263-0.580)	<.001
Malay	0.551(0.416-0.729)	<.001	0.613(0.460-0.816)	.001	0.700(0.521-0.941)	.018

Table 3: Multivariate analyses for ethnicity

Results: Indian & Malay were less likely to quit smoking

	6 months		12 months	
	adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value
Education				
Nil	1 (reference)		1	
Degree and Higher Tertiary education	2.538 (1.221-5.277)	.013	2.264 (1.046-4.897)	.038

Table 4: Multivariate analyses for education

Results: Patients with degree and higher tertiary education were more likely to quit smoking than those with no education

Ward discipline		3 months		6 months		12 months	
		adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value
CVM		1 (reference)		1		1	
	NL	0.647 (0.460-0.909)	.012	0.664 (0.465-0.947)	.024	0.553(0.374-0.817)	.003
	Others	0.578 (0.441-0.758)	<.001	0.703 (0.534-0.925)	.012		

Table 5: Multivariate analyses for ward discipline

Results: Patients admitted under neurology or other disciplines were less likely to quit smoking compared to that of cardiology

Marital status		3 months		6 months		12 months	
		adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value
Single/Divorced		1 (reference)		1		1	
	Married	1.539 (1.144-2.069)	.004	1.692 (1.241-2.306)	.001	1.539 (1.108-2.137)	.010

Table 6: Multivariate analyses for marital status

Results: Married patients were more likely to quit smoking than subjects who were single/divorced

NDS		3 months		6 months	
		adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value
≥ 6		1 (reference)		1	
	4-5	1.373 (1.061-1.777)	.016	1.402 (1.071-1.837)	.014
	0-3			1.461 (1.075-1.985)	.015

Table 7: Multivariate analyses for Nicotine Dependence Score (NDS)

Results: Patients who had NDS of 4-5 were more likely to quit than those with score ≥ 6 and patients who had NDS of 0-3 were more likely to quit than those with score ≥ 6

Types of treatment received		3 months		6 months		12 months	
		adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value	adjusted OR (95% IC)	p value
Cold Turkey		1 (reference)		1		1	
	Reducing	0.330 (0.257-0.423)	<.001	0.398 (0.309-0.512)	<.001	0.432 (0.331-0.564)	<.001
	NRT	0.666 (0.471-0.942)	.022	0.622 (0.429-0.901)	.012	0.577 (0.386-0.861)	.007
	Reducing +NRT	0.376 (0.179-0.789)	.010				

Table 8: Multivariate analyses for types of treatment

Results: Patients who received cold turkey were more likely to quit smoking compared to those who receive other types of treatment

No. of sticks smoked/day	6 months	
	adjusted OR (95% IC)	p value
	0.9862 (0.9741-0.9984)	.026

Table 9: Multivariate analyses for no. of sticks smoked per day

Results: No. of sticks smoked per day was a significant factor

Discussion

Quit rate: Patients' determination could have dropped as time passes. Hence, more efforts, such as more frequent follow up calls, to maintain subjects' determination could help.

Ethnicity: Understanding the differences in the culture and habits of the different races in Singapore may help in addressing the quit rates of the Malay and the Indian communities.

Education level: More efforts can be channelled to subjects who are of lower education level, such as holding cessation talks and programmes for them.

Ward disciplines: Most wards had quit rates lower than the cardiovascular reference group, hence more effort can be channelled towards these group of patients.

Marital status: Subjects who were married were more likely to be more motivated to quit smoking due to the obvious health benefits for the family. Hence, other forms of motivations should be uncovered for the single and divorced subjects to spur them to quit smoking.

NDS: Since those with lower scores were able to quit more easily, it would be crucial to get the subjects to quit early.

Types of treatment: Subjects who used cold turkey as a treatment method were more likely to quit. Perhaps, cold turkey could be offered as the first choice of treatment.

Conclusion

The quit rate achieved by the TTSH inpatient smoking cessation programme is comparable to those reported in other studies.

With the known significant predictors, healthcare professionals could achieve better outcomes for smoking cessation by tailoring the counselling according to the smoker's profile.