

Factors Influencing Smoking Behaviour Changes during Ramadan among Malay Male Students

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p> <hr/> <p><i>Article History:</i> Received: 11 Aug 2015 Revised: 14 Oct 2015 Accepted: 15 Oct 2015 Published: 18 Oct 2015</p> <hr/> <p><i>Keywords:</i> Malay male smokers Ramadan Smoking behaviour change</p>	<p>Introduction: Fasting during Ramadan provides an opportunistic setting for smoking cessation intervention. Smokers find it easy to cease smoking during Ramadan due to the religion, cultural and environmental influences. This study aims to determine the changes in smoking behaviour during Ramadan among Malay Muslim male students who were current smokers.</p> <p>Methods: This is cross sectional study using self-administered questionnaire to evaluate the socio demographic characteristics and two main relevant religious perceptions on smoking (i.e. 'Is smoking 'haram' and 'Does smoking invalidate your fasting'). Fagerstrom Test for Nicotine Dependence (FTND) questionnaire was used to evaluate smoking behaviour before and during Ramadan. The total FTND scores and the percentages according to FTND items, before Ramadan and during Ramadan were compared to determine good or poor smoking behaviour changes.</p> <p>Results: The overall FTND scores and the percentage according to its items were significantly reduced. There were significant association between smoking behaviour changes during Ramadan and household income, nicotine dependence and perception that smoking is 'haram'. The percentage of good smoking behaviour changes was higher among those with higher income, high nicotine dependence and those who are not aware that smoking is 'haram'.</p> <p>Conclusion: There is a great potential in taking advantage of the Ramadan environment to encourage smoking cessation among Muslim smokers.</p>

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Introduction

According to many well-known scholars in Islam, smoking is ruled as 'haram' (religiously forbidden) (1). Their ruling is supported by many evidence in the Quran and 'hadith' (sayings of the Prophet peace be upon him). Unfortunately, despite this religious ruling, the prevalence of smoking in Muslim countries is still among the highest (2). An analysis of 30 Muslim countries showed the overall prevalence of smoking at between 10.5-57.5%. The prevalence among men is between 16.0-69.0% while prevalence among women is 1.5-47.5% (2).

Ramadan is a sacred month in the Islamic calendar. Muslims all around the globe fast during day time for this whole month. Interestingly, it is observed that Muslims who smoke are able to refrain themselves from smoking while fasting between sunrise and sunset. A review of studies related to Ramadan

fasting shows that fasting in Ramadan can serve as an opportunity to weaken risky behaviours that affect health including smoking (3). It has also been noted that Muslims have an extremely positive attitude toward smoking cessation during Ramadan and most smokers find it easy to give up smoking during this month (4, 5).

In Malaysia, Malays make up about 61.4% (17.12 million) of the country's population and the majority of them are Muslims. The prevalence of smoking is highest among Malay males (55.9%) compared to other ethnic groups within the country (6). Thus the Ministry of Health of Malaysia has embarked on a smoking cessation initiative in conjunction with Ramadan through a nation-wide 'Nafas Baru Bermula Ramadhan' campaign (which means 'new breath starting Ramadan'). A survey conducted by the ministry stated that 96.7% of

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Muslim smokers in Malaysia feel that it is easier for them to stop smoking during Ramadhan (7). Much of this may be attributed to the influences of Ramadan's environment. In Malaysia, Muslims are religiously and culturally expected to fast and the religious ruling is that smoking nullifies fasting. Therefore smokers will abstain from smoking during fasting. Hence the usual cues to smoke such as seeing another smoker lighting up and the smell of cigarette smoke, are both almost non-existent during Ramadan.

This study aims to determine the changes in smoking behaviour during Ramadan among a group of students in a public university. This study also intends to study the factors associated with the changes in smoking behaviour during Ramadan. The findings of this study could assist in improving the current Ramadan smoking cessation campaign in Malaysia, particularly among university students.

Material and methods

This cross sectional study was carried out in one of the colleges in a public university in Malaysia during Ramadan 2015. The study population was Malay Muslim male students in the college who were current smokers. Sample size calculation showed 200 respondents were required for the study. The respondents were randomly chosen from the list of students who smoke. The exclusion criteria was the use of tobacco products other than cigarette.

A self-administered questionnaire was developed to evaluate the respondents' characteristics (i.e. household income, sponsorship for studying at the university and having a part time job) and their perceptions on two main relevant religious rulings regarding smoking (i.e. 'Is smoking 'haram' and 'Does smoking invalidate your fasting'). Two sets of Fagerstrom Test for Nicotine Dependence (FTND) questionnaires were used to determine the level of nicotine dependence (one set to assess the FTND scores before Ramadan and the other for during Ramadan). Total FTND score of ≤ 4 was considered as low nicotine dependence and a score of >4 was considered as high nicotine dependence.

Paired *t* test was used to determine changes in the overall FTND scores. *McNemar* test was used to observe percentage changes in the

individual FTND's items. However for item 1 and 4 (which has more than 2 responses), the responses were first collapsed into two groups. For item 1 ('How soon after waking up do you smoke your first cigarette'), the 2 groups were ≤ 5 minutes and >5 minutes. For item 4 ('How many cigarettes a day do you smoke'), the 2 groups were ≤ 10 cigarettes and >10 cigarettes.

Finally, the FTND scores were also used to categorize smoking behaviour changes into either good behaviour change or poor behaviour change. A reduction in the total FTND score was considered as good smoking behaviour change and *status quo* or increase in score was considered as poor smoking behaviour change. *Chi squared* test for associations was applied to determine the association between smoking behaviour change (i.e. either good or poor smoking behaviour change) with respondents' characteristics (i.e. household income, sponsorship for studying at the university and having a part time job), level of nicotine dependence and also the two religious related questions (i.e. 'Is smoking 'haram' and 'Does smoking invalidate your fasting'). Statistically significant level value was set at $P \leq 0.05$ for all tests.

Results

The response rate was 98.2%. A total of 108 respondents out of the 200 selected participated in this study. The majority of the respondents' household income was RM 3000 or more (74.1%). Most were either receiving scholarship (39.9%) or has a study loan (43.5%) to study in the university and do not have part time jobs (89.9%).

Table 1 shows that the overall FTND score was significantly reduced. Table 2 shows that the change in percentage from before Ramadan to during Ramadan, according to the items in FTND questionnaire was all statistically significant. The highest percentage of reduction was in the number of cigarettes smoked per day followed by the interval of smoking first cigarette after waking up.

Table 3 shows that only 49.1% showed good smoking behaviour changes. The majority belongs to the high nicotine dependence category. 57.4% declared that they knew smoking is 'haram' while 83.3% were aware that smoking would invalidate their fasting. Test of

Table 1. The mean FTND score before and during Ramadan (N=108)

Variable	Before Ramadan mean±sd	During Ramadan mean±sd	P	(95% CI)
Total FTND score	5.44±2.393	3.85±1.797	<0.001*	(1.139-2.028)

Paired t test, statistically significant if P < 0.05

Table 2. The distribution of respondents according to item of FTND, before and during Ramadan (N=108)

	Before Ramadan n (%)	During Ramadan n (%)	% reduce	P
	a	b	(a-b/a)X100	
How soon after waking up do you smoke your first cigarette				
≤ 5 minutes	66(61.1)	33(30.6)	↓50.0	<0.001*
> 5 minutes	42(38.9)	75(69.4)		
Do you find it difficult to refrain from smoking in places where it is forbidden				
Yes	78(72.2)	53(49.1)	↓32.0	<0.001*
No	30(27.8)	55(50.9)		
Which cigarette do you hate to give up				
The first in the morning	61(56.5)	43(39.8)	↓29.5	0.005*
Any other	47(43.5)	65(62.2)		
How many cigarettes a day do you smoke				
>10	65(60.2)	16(14.8)	↓75.4	<0.001*
≤ 10	43(39.8)	92(85.2)		
Do you smoke more frequently in the morning				
Yes	74(68.5)	61(56.5)	↓17.5	<0.035*
No	34(31.5)	47(43.5)		
Do you smoke even if you are sick in bed most of the day				
Yes	50(46.3)	29(26.9)	↓41.9	<0.001*
No	58(53.7)	79(73.1)		

McNemar test, statistically significant if P<0.05

association showed significant association between smoking behaviour changes during Ramadan and household income, nicotine dependence and knowing that smoking is 'haram'. The percentages of good smoking behaviour changes were higher among those in the higher income groups, and surprisingly among those in the high nicotine dependence group and those who are not aware that smoking is 'haram'.

Discussion

The total FTND scores were significantly reduced which indicates an overall reduction in nicotine dependence and good smoking behaviour changes occurring during Ramadan. This is supported by the percentage of reduction in all of FTND items particularly in item 4 (How

soon after waking up do you smoke your first cigarette) which is known as the single best indication for nicotine dependence (8). The reduction of number of cigarettes smoked per day was expected as the time frame to smoke was markedly reduced by approximately 12 hours during daytime in Ramadan. The finding in this study is in line with the findings of two other studies in Malaysia which reported that during Ramadan, Malaysia Muslims smoke only 36% of what they used to before Ramadan (9) and 97.7% among the current smokers agreed that fasting reduces the number of cigarettes they consume per day during Ramadan (7).

Despite the encouraging changes in the overall mean of total FTND scores and the reduced percentage score in all of its items, the percentage of good smoking behaviour

Table 3. The associations between smoking behaviour changes during Ramadan and respondents characteristics (i.e. household income, sponsorship for studying at the university and having a part time job), level of nicotine dependence and respondents' perception of Islamic rulings (i.e. smoking is haram and invalidates fasting) (N= 108)

Variables	n(%)	Smoking behavior changes during Ramadan		P
		Good n= 53 (49.1%)	Poor n=55 (50.9%)	
Household income				
RM ≤1999	17(15.8)	1(5.9)	16(94.1)	0.001*
RM 2000-2999	11(10.2)	4(36.4)	7(63.6)	
RM 3000-3999	21(19.4)	11(52.4)	10(47.6)	
RM 4000-4999	35(32.4)	21(60.0)	14(40.0)	
RM 5000	24(22.2)	16(66.7)	8(33.3)	
Study sponsor				
Scholarship	43(39.9)	20(46.5)	23(53.5)	0.812
Study loan	47(43.5)	23(48.9)	24(51.1)	
Self-sponsored	18(16.6)	10(55.6)	8(44.4)	
Part time job				
Yes	11(10.2)	6(54.5)	5(45.5)	0.702
No	97(89.8)	47(48.5)	50(51.5)	
Nicotine dependence				
Low	32(29.6)	3(9.4)	29(90.6)	<0.001*
High	76(70.4)	50(65.8)	26(34.2)	
Smoking is 'haram'				
Yes	62(57.4)	25(40.3)	37(59.7)	0.027*
Not sure/No	46(45.6)	28(60.9)	18(39.1)	
Smoking invalidates fasting				
Yes	90(83.3)	47(52.2)	43(47.8)	0.114
Not sure/No	18(16.7)	6(33.3)	12(66.7)	

Chi squared test, statistically significant if $P < 0.05$

changes defined in this study (i.e. reduction of an individual's total FTND score during Ramadan) was only 49.1%. Despite the supportive environment during Ramadan, some respondents still didn't report good smoking behaviour changes during this month. This could be because of the perceived barriers of smoking cessation during Ramadan (such as craving for smoking, fear of inability to cope with stress, irritability, peer pressure and etc.) which was not studied in this study (5). These barriers could be the reason why although many Muslim smokers (96.7%) in Malaysia feel that it is easier to stop smoking during Ramadan (7) but only 19.4 % perceived Ramadan as a motivator to quit smoking (9).

The only statistically significant association between good smoking behaviour changes and respondents' characteristic was with household income. The percentages of good smoking

behaviour changes increase with increased household income. The significant association between income and smoking behaviour had been established in a few other studies in Malaysia where the lower income groups have a higher tendency to smoke and lower success or higher failure rate to quit smoking (6, 10, 11).

Further analyses showed there was a statistically significant association between good smoking behavior changes and nicotine dependence. However, the incongruity was the percentage among those who had good smoking behavior changes in Ramadan was higher among those who were highly nicotine dependent. This is similar to the findings of a study among smokers attending quit smoking clinics which showed that there were no association between nicotine dependence measured by FTND with smoking cessation and a smoker who is more nicotine dependent is less

likely to report conflicting motivation to cease smoking thus have better attempts to change their behavior (12, 13).

Lastly, regarding the religious ruling that smoking is 'haram', only 57.4% of the respondents were aware about it. This percentage is higher than the finding of two other studies in the country. One was a study carried out among 1482 Malaysia Muslim smokers in 2005 which reported that only 8.25% knew that smoking is 'haram' while the other 80.9% claim that it is only discouraged (9). The other study carried out among smokers attending 8 smoking cessation clinics at government primary health centres in 2004 reported that only 7.0 % knew that smoking is 'haram' while 89% claim that it is only discouraged (14). Although these study populations were different but the result of this study showed that within the last decade the awareness of the religious rulings had improved.

Further analysis showed that there was a statistically significant association between good smoking behaviour changes and being aware that smoking is 'haram'. However, the irony was that the percentage among those who had good smoking behaviour changes in Ramadan was higher among those who were not aware or not sure about the religious ruling that smoking is 'haram'. Thus this showed that the positive changes were not influenced by the awareness of this religious ruling. Although religion was found to be the highest reason for not smoking among non-smokers (15) it was not a strong reason for current smokers to cease or quit smoking. This could be in line with the finding of a study among smokers attending quit-smoking clinics in one of the states in Malaysia which showed that religion was not a significant motivator to quit smoking (12).

There were a few limitations of this study. First, it was a cross-sectional study and the sample size was small, thus the findings of the study could not be generalized. Second, the FTND data for before Ramadan was collected during the first week of Ramadan, thus there could have been recall biases. The data for during Ramadan which was also collected during the first week of Ramadan might not be representative of the whole of Ramadan. Thirdly, the factors that might be confounders

such as history of smoking initiation and history of smoking cessation attempts were not studied. Last but not least, the other constraints of this study was the absence of evaluation of the respondents' awareness of the nation-wide 'Nafas Baru Bermula Ramadhan' campaign which could have influenced their behavioural changes (16).

Conclusion

The present study showed that only half of respondents have good smoking behaviour changes during Ramadan. Nevertheless, there is a great potential in capitalizing on the Ramadan environment to encourage smoking cessation among Muslim smokers. A longitudinal study could be carried out to establish predictors of smoking behaviour changes in Ramadan and the result of the study could help improve the current nation-wide 'Nafas Baru Bermula Ramadhan' campaign in Malaysia.

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