PostScript

LETTERS

Biochemical validation of self reported quit rates among Buddhist monks in Cambodia

Smoking cessation programmes in Cambodia have found that Buddhist monks are highly motivated to quit smoking. Although over 23.4% of all Buddhist monks smoke,[1] the self reported quit rates average 87%. The Adventist Development Relief Agency's (ADRA) ''Khmer Quit Now'' programme has achieved this success through a five day smoking cessation class. ADRA has found that Buddhist monk peer support groups work well; the one year quit rate has been a consistent 87% over four years in five different Cambodian provinces. This extraordinary quit rate warranted biochemical validation and an explanation of the programme's effective methods.

To investigate the quit rate, 250 monks were identified from Cambodian Wats who had completed the smoking cessation programme. These monks were first interviewed about their smoking status, then administered a saliva test. The monks had no prior knowledge that they would be asked for a saliva sample until after they completed the survey questionnaire. Salivary cotinine, a byproduct of nicotine and marker of smoking status,[2] was collected using the Orasure oral specimen collection device and analysed using the microplatte enzyme immunoassay technique by the Pasteur Institute in Phnom Penh. A salivary cotinine concentration greater than the cut off[3] of 10 ng/ml determined ''current smoking'' status.

Out of the 250 monks, 224 (89.6%) reported themselves as non-smokers, whereas only 12 monks (5.3% false positives) had levels above the cut off. Upon follow up, five of these monks explained that they do smoke, but felt obliged to report themselves as non-smokers during the survey. The remaining seven monks said that they chew tobacco,[2] denied reporting themselves as non-smokers,[2] denied ever smoking,[2] or were lost for follow up.[1] This represents a concordance of 94.6% and a κ statistic[1] specifying that this study is a *good* (κ = 0.598, SE = 0.081, p = 0.000) predictor of the monk self report quit rate (table 1).

The high level of discipline and motivation among the Smoke Free Buddhist Monk quit programme is not unique to Cambodia. Any smoking cessation programme can achieve similar results with a strong peer support network, frequent motivational monitoring, and a firm quit date. Although many of the Buddhist monks had low cigarette consumption levels before they quit, this study demonstrates the success and simplicity of ''natural'' quit programmes; the Buddhist monks in this study did not rely on chemical or medicinal methods to stop smoking. They are merely a highly disciplined group of smokers who used available resources to stop smoking.

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Table 1 Self reported quit rates of Cambodian Buddhist monks

	Accurate self report		False self report		Total
Smoking status	(n)	Concordance (%)	(n)	%	(n)
Ex-smoker	22	94.64%	12	5.36%	224
Current smoker	25	96.15%	1	3.85%	26
Total	237	94.80%	13	5.20%	250

The Cambodia Adventist Development Relief Agency study on biochemical validation of quit rates, July 2002.

Table 1 Cigarette consumption and ever nicotine replacement therapy (NRT) use of current smokers in 2002*

		Smokers according to frequency of smoking and number of cigs per day		
	Total smokers	Occasional	Daily <15 cigs/d	Daily 15+ cigs/d
Ever used NRT (n = 1914)	−31.6 (1.5)	−16.3 (2.3)	−26.9 (3.0)	−47.0 (2.2)
Reason for using NRT				
To quit (n = 1622)	86.4 (2.1)	83.3 (5.7)	86.5 (3.3)	87.1 (2.7)
To tide over (n = 145)	7.4 (1.6)	4.6 (2.5)	5.2 (2.1)	9.2 (2.1)
To cut down (n = 75)	4.0 (1.0)	4.4 (3.5)	2.7 (1.4)	4.6 (1.5)
Just curious (n = 82)	4.2 (1.0)	4.6 (2.6)	5.5 (2.2)	3.4 (1.1)

*Table entries are weighted percentages (±95% confidence intervals).

When California smokers use nicotine replacement therapy, most are trying to quit smoking

Extensive literature exists about nicotine replacement therapy (NRT) efficacy in randomised clinical trials of smoking cessation,[1] yet population data do not show sustained effectiveness after NRT became available over the counter in the USA.[2 3] Some claim that product cost is the main obstacle for its lack of population effectiveness.[4] A large population based natural experiment is underway in New York that will test this hypothesis. Others suggest that smokers may be using NRT for reasons other than quitting, such as harm reduction or to mitigate withdrawal symptoms when they are unable to smoke.[5]

We present data from the 2002 California Tobacco Survey (CTS) which is part of large population based, random digit dialled surveys conducted triennially to monitor changes in tobacco use and attitudes in California. The methods for this survey are described in detail elsewhere.[6] In order to assess the purpose and pattern of NRT use among California smokers, the 2002 CTS asked 5498 current smokers the following: Have you ever used a nicotine substitute product such as a patch, gum, inhaler or lozenge? If they answered yes, they were then asked an open ended question: Why did you use it? They could respond with multiple reasons. Interviewers coded responses into four pre-determined categories: to try to quit, to tide me over in situations where I cannot smoke, to replace some cigarettes so I smoke less, and just curious.

In table 1, we present these results, categorised by smoking level. Ever use of NRT increased with the amount smoked, with almost half (47%) of moderate to heavy daily smokers (15+ cigarettes/day), potentially who would benefit the most, having used it in the past. Overall, about one third of smokers tried NRT and most used it to quit (86.4%). Less than 10% used it for any other single reason. Despite the fact that nearly half of current moderate to heavy smokers reported having used NRT in the past, data from the 2002 CTS indicate only 27% reported using it for their most recent quit attempt that lasted for a day or longer.

These findings suggest that California smokers have tried NRT mainly for cessation, not supporting suggestions that this therapy is

REFERENCES

1 **Adventist Development and Relief Agency, Cambodia**. *''Smoke Free Cambodian Communities'' project. Buddhist monk and Cambodian community prevalence survey*, Internal publication, 2004.
2 **Benowitz NL**. Biomarkers of environmental tobacco smoke exposure. *Environ Health Perspect* 1999;**107**(suppl):349–55.
3 **Vartiainen E**, Seppälä T, Lillsunde P, *et al*. Validation of self reported smoking by serum cotinine measurement in a community-based study. *J Epidemiol Community Health* 2002;**56**:163–64.

used mainly to decrease consumption or to overcome craving when smoking is not allowed. However, it is notable that many moderate to heavy cigarette smokers who had previously used NRT did not do so on their most recent attempt. This suggests that some smokers may be questioning the efficacy of NRT for quitting. It is possible that this could be in response to a change in the advertising message promoting NRT, where the current message may be perceived as over selling the effectiveness of NRT. This is indirectly supported by our recent findings (among 12–17 year old adolescents) that established smokers were much less likely (19%) to believe NRT is a sure way to quit compared to never smokers (38%) in the same age group.[7] Further studies are needed to understand the influence of NRT advertisement on the beliefs and use of NRT by smokers.

Table 1 Estimated effects of the smoke-free law

	Total revenues (weighted least squares) ($million)			Average revenue per machine (ordinary least squares) ($/machine)		
Variable	**Estimate**	**SE**	**p Value**	**Estimate**	**SE**	**p Value**
P_{law}(unit/month)	−2.404	3.302	0.468	−1158.11	745.10	0.123
Time (unit/month)	0.612	0.102	<0.001	96.47	36.70	0.010
Time^2 (unit/month^2)	−0.005	0.001	<0.001	−0.31	0.278	0.259
Machines (unit/machine)	0.003	0.001	0.024	−2.424	−2.762	<0.001
Income (unit/$million)	7.568	1.087	<0.001	10717.00	467.00	<0.001
Winter	−4.147	0.872	<0.001	−1353.01	314.79	<0.001
n	101			101		
R^2	0.669			0.639		

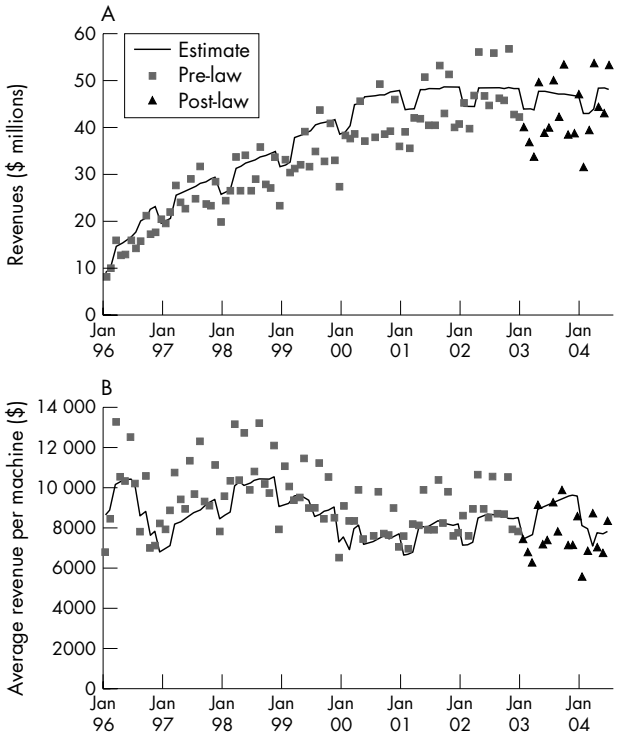

Figure 1 (A) Total revenues increase from the creation of the racinos and then flatten out with the economic downturn. No significant relation between total revenues and the smoke-free law exists. (B) Average revenues per machine vary over time and decrease with the downturn in the economy. No significant relation between average revenues and the smoke-free law exists.

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REFERENCES

1 **Silagy C**, Lancaster T, Stead L, *et al*. Nicotine replacement therapy for smoking cessation. *Cochrane Database Syst Rev* 2004;**3**:CD000146.
2 **Pierce JP**, Gilpin EA. Impact of over-the-counter sales on effectiveness of pharmaceutical aids for smoking cessation. *JAMA* 2002;**288**:1260–4.
3 **Thorndike AN**, Biener L, Rigotti NA. Effect on smoking cessation of switching nicotine replacement therapy to over the counter status. *Am J Public Health* 2002;**92**:437–42.
4 **Cummings KM**, Hyland A. Impact of nicotine replacement therapy on smoking behavior. *Annu Rev Public Health* 2005;**26**:583–99.
5 **Etter JF**, Laszlo E, Zellweger JP, *et al*. Nicotine replacement to reduce cigarette consumption in smokers who are unwilling to quit: a randomized trial. *J Clin Psychopharmacol* 2002;**22**:487–95.
6 **University of California, San Diego (UCSD) Social Science Data Center**. Final reports, technical documentation and data from the California Tobacco Surveys, 2005. http://ssdc.ucsd.edu/tobacco.
7 **Al-Delaimy WK**, White MM, Pierce JP. Adolescents' perceptions about quitting and nicotine replacement therapy: findings from the California tobacco survey. *Journal of Adolescent Health* (in press).

CORRECTION

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Mandel LL, Alamar BC, Glantz SA. Smoke-free law did not affect revenue from gaming in Delaware. *Tobacco Control* 2005;**14**:10–12.

This article contains inaccurate results because of a data entry error. Below is an update of table 1 and fig 1 showing the correct results. White's test for heteroskedasticity rejected homoskedasticity ($p = 0.016$) in the case of total revenues. We corrected for the heteroskedasticity in total revenues by using a weighted least squares analysis using the inverse of the number of video lottery machines as the weight. White's test of the residuals from the weighted regression did not reject homoskedasticity ($p = 0.293$). Average revenues were homoskedastic ($p = 0.13$) so we continued to use an unweighted regression. The analysis based on the corrected data confirms the results of the published paper, that the smoke-free law had no affect on revenue from gaming in Delaware.