Brief Report

Predictors of 3-Month Abstinence in Smokers Attending Stop-Smoking Clinics in Malaysia

Lei Hum Wee, M.Hlth.Comm.,[1,2] *Robert West, Ph.D.,*[3] *Awang Bulgiba, Ph.D.,*[4,5] *& Lion Shahab, Ph.D.*[3]

[1] *Institute of Health Management, Ministry of Health Malaysia, Kuala Lumpur, Malaysia*

[2] *Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia*

[3] *Cancer Research UK Health Behaviour Research Centre, Department of Epidemiology & Public Health, University College London, London, UK*

[4] *Office of the Deputy Dean, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia*

[5] *Julius Centre University of Malaya, Kuala Lumpur, Malaysia*

Corresponding Author: Lei Hum Wee, M.Hlth.Comm., *Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia. Telephone: +603-7967-4756/7547; Fax: +603-7967-4975; E-mail: weeleihum@gmail.com*

Abstract

Introduction: Much is known about the predictors of success in quitting smoking. In particular, nicotine dependence, but not strength of motivation to stop, appears to predict abstinence. However, to date, studies have come almost exclusively from Western countries. More data are needed on the cross-cultural generalizability of these findings.

Methods: One hundred and ninety-eight smokers attending 5 stop-smoking clinics in Malaysia completed a questionnaire prior to their target quit date and were followed up 3 months after this date. Predictors included sociodemographic variables, smoking patterns, past history of quitting, characteristics of current quit attempt, and smoking motives as well as nicotine dependence (Fagerström Test for Nicotine Dependence [FTND]) and self-rated strength of motivation of stop.

Results: At 3-month follow-up, 35.4% (95% *CI*: 28.7–42.0) of participants reported being abstinent. A backward elimination multiple logistic regression identified a number of significant predictors of success, including strength of motivation to stop (adjusted odds ratio [*OR*]: 3.05, 95% *CI*: 1.28–7.25). FTND did not predict success.

Conclusions: Motivation and nicotine dependence may play different roles in explaining variation in ability to stop smoking in different cultures.

Introduction

Much is known about predictors of successful cessation in smokers from western samples but less is known about non-western samples. This study aimed to assess predictors of medium-term success in smokers attending Malaysian stop-smoking clinics and focused on the predictive value of measures of motivation and nicotine dependence.

Previous prospective studies of smokers attempting to stop have identified a number of predictors of success. Among the most consistent findings is an association between quit success and lower nicotine dependence (Baker et al., 2007; Zhou et al., 2009). In contrast, self-reported strength of motivation to stop smoking has typically not been found to predict quit success (e.g., Baker et al., 2007; Herd, Borland, & Hyland, 2009; West, Mcewen, & Bolling, 2001). There is evidence that having made a quit attempt within the past few months is predictive of failure (West et al., 2001) and that being married or living with a partner is predictive of success (Lee & Kahende, 2007; McDermott, Dobson, & Owen, 2009) as is older age (Levy, Romano, & Mumford, 2005; Zhou et al., 2009). There are conflicting findings about the predictive value of educational attainment (Hymowitz et al., 1997; Lee & Kahende, 2007), economic status (Goddard, 2006; Shiffman, Brockwell, & Pillitteri, 2008), gender (Ferguson et al., 2003; Hagimoto, Nakamura, Morita, Masui, & Oshima, 2009), social support (Chandola, Head, & Bartley, 2004; Monden, De Graff, & Kraaykamp, 2003), age at smoking initiation (Fung et al., 2005; Twardella et al., 2006), and current health (Gwaltney et al., 2001; McDermott et al., 2009).

Studies on the association of smoking cessation with dependence and motivation to stop in non-western samples have yielded mixed findings to date. In Chinese smokers, results are conflicting about the predictive value of daily cigarette consumption that has been considered a marker, albeit weak, of dependence (Abdullah, Lam, Chan, & Hedley, 2004; Abdullah et al., 2006, 2008; Sun et al., 2009; Yang et al., 2009; Yu et al., 2004). One study from Japan found, as in western samples, that motivation to stop predicted attempts at cessation, but nicotine dependence predicted success of attempts (Hagimoto et al., 2009). A study from Korea found that nicotine dependence predicted success at stopping (Myung et al., 2008). In another study, intention to stop but not level of addiction predicted abstinence in Korean men hospitalized for cardiovascular disease (Sohn et al., 2008). A study in Israel reported that confidence in ability to quit but not nicotine dependence predicted

successful cessation in stop smoking clinic attendees (Sperber, Goren-Lerer, Peleg, & Friger, 2000).

This study examined predictors of quitting in Malaysian smokers attending stop-smoking clinics with a particular focus on dependence and motivation to stop.

Methods

Study Design, Sample, and Procedure

This was a prospective study of first-time attendees at five quit-smoking clinics in Malaysia. All clinics followed a standardized intervention protocol (Clinical Practice Guidelines, 2003), employed trained quit-smoking personnel, and offered free nicotine replacement therapy (NRT) to smokers.

Smokers were screened during their initial clinic visit and the first 200 who agreed to participate completed the study questionnaires. At the first visit, sociodemographic, smoking and smoking cessation characteristics, as well as motivational variables were recorded. In addition, expired-air carbon monoxide (CO) levels were measured.

At 3-month follow-up, 190 smokers were interviewed via telephone. Following the Russell Standard (West, Hajek, Stead, & Stapleton, 2005), eight smokers who did not respond to follow-up attempts were counted as smokers and two smokers who had moved to an untraceable address were excluded from the study.

The study received ethical approval from the Medical Ethics Committee, University Malaya Medical Centre. Written consent was obtained from all smokers prior to their first interview.

Measures

The questionnaires were prepared in either Malay or English. The baseline measures, obtained prior to the quit attempt, included sociodemographic characteristics (age, gender, marital status, ethnicity, and educational level), occupation, clinic attended, presence of health problems (yes/no), smoking characteristics (age started smoking, cigarettes smoked per day, and nicotine dependence measured by Fagerström Test for Nicotine Dependence [FTND] Heatherton, Kozlowski, Frecker, & Fagerstrom, 1991), CO concentration, whether they had made a quit attempt previously, intended method of current quitting (abrupt cessation or gradually reducing), whether they decided to quit and then sought help from the clinic (planned) or whether they saw information from the clinic and decided to quit (unplanned), and intended NRT use (yes/no). Smoking motivation was assessed using the Smoking Motives Questionnaire. It covers stress relief, boredom relief, weight control, relief of withdrawal discomfort, help with concentrating, enjoyment, and help with socializing rated on a 5-point scale (*yes very much*, *yes quite a bit*, *yes a little*, *no not really*, and *not at all*; McEwen, West, & McRobbie 2008, #1804). For conciseness, we divided the scale into those who reported the motive to any degree (*yes a little*, *yes quite a bit*, and *yes very much versus no not really* and *not at all*). Participants were asked if they were unhappy about being a smoker (yes/no); had been pressured by family, friends, or health professionals into giving up smoking (yes/no); were happy about the idea of becoming a nonsmoker (yes/no); definitely

intended to stop smoking completely and never smoke again (yes/no); and believed at that moment they would stop for good this time (yes/no). They also rated how motivated they were to stop (extremely, very, quite, and not very) and how confident they were (extremely, very, quite, and not very).

Smoking status at 3-month follow-up was assessed by asking participants: "Did you smoke any cigarettes or tobacco at all after quit date?" (yes/no).

Statistical Analysis

The sample provided 80% power to detect small- to medium-sized differences between relapsers and abstainers ($w = 0.2$) at a standard significance level ($p < .05$). Differences between those who were abstinent or not at follow-up were determined using chi-square tests for categorical and t tests for continuous variables. Logistic regression with abstinence as the dependent variable was carried out to assess the independent contributions of predictor variables using a backward elimination model. The goal was to determine the most parsimonious explanation of variance in quit success.

Results

The study sample was predominantly male, Malay, married, and had an average age of 35 years (Table 1). A third had experienced health problems, and most had started smoking in their teens. Average nicotine dependence was high, but baseline CO readings were low. Most participants had made previous quit attempts, a majority of smokers were planning to stop before contacting the clinic, and the majority of smokers were also intending to stop abruptly and to use NRT (Table 1).

Except for using smoking for weight control, a high proportion of respondents endorsed all the smoking motives (Table 1). Less than a third of participants felt confident in their ability to stop though the vast majority intended to stop smoking permanently (Table 1).

At 3-month follow-up, 35.4% (95% *CI*: 28.7–42.0) reported having been continuously abstinent. Those who were abstinent were more likely to be older, married, and to have intended abrupt rather than gradual cessation (Table 1). Smokers at Tanglin clinic were more likely to report being abstinent than those who had attended other clinics; there were also some ethnic differences (Table 1). Smoking to cope with stress and to help socialize were associated with a higher relapse rate, and those who were unhappy about being a smoker, strongly motivated to quit, confident in their ability to quit, and who believed they would stop for good this time were more likely to be abstinent (Table 1).

In the backward elimination multiple logistic regression, those who were married were more likely to be abstinent as were those of Chinese compared with Malay ethnicity. Those who planned to quit before contacting the clinic were less likely to succeed than those who decided to quit on learning about the clinic, and those with previous quit attempts were marginally more likely to be abstinent. Smoking "to cope with stress" was associated with relapse (Table 2). Four motivational promoters predicted success at smoking cessation. With the exception of being happy about becoming a nonsmoker, all were positively associated with abstinence: Those who were unhappy about

Table 1. Baseline Measures and Their Association With Abstinence (*N* = 198)

	Total sample (*n* = 198)	Abstinent (*N* = 70)	Relapsed (*N* = 128)	*P* value
Sociodemographic characteristics				
Age, years, mean (*SD*)	35.0 (12.4)	37.5 (13.4)	33.6 (11.6)	.033
Male, % (*N*)	95.5 (189)	95.7 (67)	95.3 (122)	.897
Married, % (*N*)	59.1 (117)	68.6 (48)	53.9 (69)	.045
Ethnicity, % (*N*)				
Malay	64.6 (128)	61.4 (43)	66.4 (85)	
Chinese	16.7 (33)	20.0 (14)	14.8 (19)	.639
Other	18.7 (37)	18.6 (13)	18.8 (24)	
Education[a], % (*N*)				
Primary school	6.6 (13)	8.6 (6)	5.5 (7)	
Secondary school	50.0 (99)	47.1 (33)	51.6 (66)	.651
Tertiary education	43.4 (86)	44.3 (31)	43.0 (55)	
Occupation, % (*N*)				
Professional, technical, and business	45.5 (90)	41.4 (29)	47.7 (61)	
Clerical, service, and arm forces	23.2 (46)	28.6 (20)	20.3 (26)	.578
Manual	16.2 (32)	14.3 (10)	17.2 (22)	
Retired, unemployed, housewife, or student	15.2 (30)	15.7 (11)	14.8 (19)	
Health problems, % (*N*)	31.8 (63)	31.4 (22)	32.0 (41)	.931
Clinic, % (*N*)				
Tanglin	29.3 (58)	45.7 (32)	20.3 (26)	
Putrajaya	24.2 (48)	20.0 (14)	26.6 (34)	
Jinjang	23.2 (46)	21.4 (15)	24.2 (31)	.003
Pantai	13.1 (26)	8.6 (6)	15.6 (20)	
Kg Pandan	10.1 (20)	4.3 (3)	13.3 (17)	
Smoking characteristics, mean (*SD*)				
Age started to smoke	16.6 (4.0)	17.4 (4.8)	16.2 (3.5)	.053
Cigarettes smoked per day	17.6 (11.4)	18.4 (13.5)	17.2 (10.1)	.212
FTND score	4.5 (2.5)	4.4 (2.7)	4.5 (2.5)	.470
Baseline CO reading, ppm	10.8 (6.7)	9.8 (7.3)	11.4 (6.3)	.693
Smoking cessation characteristics, % (*N*)				
Previous quit attempt	75.3 (149)	80.0 (56)	72.7 (93)	.252
Current quit attempt—abrupt cessation	61.6 (122)	71.4 (50)	56.3 (72)	.036
Current quit attempt—planned	67.2 (133)	64.3 (45)	68.8 (88)	.522
Current quit attempt—intended NRT use	98.0 (194)	98.6 (69)	97.7 (125)	.662
Smoking motives, % (*N*)				
Smoke to cope with stress	96.0 (190)	90.0 (63)	99.2 (127)	.003
Smoke to help socialize	91.4 (181)	85.7 (60)	94.5 (121)	.034
Smoke to do something when bored	97.5 (193)	98.6 (69)	96.9 (124)	.658
Smoke to concentrate and stay alert	92.9 (184)	88.6 (62)	95.3 (122)	.088
Smoke because feel uncomfortable if not	97.5 (193)	94.3 (66)	99.2 (127)	.054
Smoke to keep weight down	56.1 (111)	51.4 (36)	58.6 (75)	.331
Smoke because enjoy it	97.5 (193)	98.6 (69)	96.9 (124)	.658
Smoking cessation promoters, % (*N*)				
Unhappy about being a smoker	54.0 (107)	65.7 (46)	47.7 (61)	.015
Pressured into stopping	71.2 (141)	72.9 (51)	70.3 (90)	.705
Happy about becoming a nonsmoker	70.2 (139)	68.6 (48)	71.1 (91)	.711
Confident in ability to stop	28.8 (57)	42.9 (30)	21.1 (27)	.001
Strongly motivated to stop	56.6 (112)	68.6 (48)	50.0 (64)	.012
Intend to stop smoking completely	84.8 (168)	90.0 (63)	82.0 (105)	.135
Believe will stop for good this time	45.5 (90)	55.7 (39)	39.8 (51)	.032

Note. FTND = Fagerström Test for Nicotine Dependence; NRT = nicotine replacement therapy; ppm = parts per million.
[a]Tertiary education—diploma/degree level.

being a smoker, confident in their ability to stop, and strongly motivated to do so were more likely to be abstinent at 3-month follow-up (Table 2). The clinic attended remained a significant predictor of smoking cessation in this model.

Discussion

This study found that strength of motivation to stop, but not dependence, predicted success at stopping. This raises the

Table 2. Results of Logistic Regression Predicting Abstinence at 3-Month Follow-Up (*N* = 198)

	Final backward elimination model odds ratio (95% *CI*)	*P* value
Sociodemographic characteristics		
Married	3.39 (1.48–7.76)	.004
Ethnicity		
Malay (reference)	1	
Chinese	3.71 (1.25–10.97)	.018
Indian	0.53 (0.18–1.58)	.255
Clinic		
Tanglin (reference)	1	
Putrajaya	0.05 (0.01–0.18)	< .001
Jinjang	0.12 (0.04–0.36)	< .001
Pantai	0.14 (0.04–0.51)	.003
Kg Pandan	0.03 (0.01–0.20)	< .001
Smoking cessation characteristics		
Previous quit attempt	2.62 (0.97–7.09)	.057
Current quit attempt—planned	0.35 (0.14–0.88)	.025
Cessation barriers		
Smoke to cope with stress	0.02 (0.00–0.28)	.003
Smoke to do something when bored	33.94 (1.0–1115.2)	.048
Cessation promoters		
Unhappy about being a smoker	2.12 (0.99–4.58)	.055
Happy about becoming a nonsmoker	0.31 (0.12–0.81)	.017
Confident in ability to stop	2.60 (1.01–6.70)	.047
Strongly motivated to stop	3.05 (1.28–7.25)	.012

possibility that in countries such as Malaysia that are at an earlier stage in the "tobacco epidemic" (Lopez, Colloshaw, & Piha, 1994) motivation plays a greater role in success at quitting than dependence. This may happen if there are still large numbers of smokers who find it relatively easy to stop. Against this hypothesis, the mean level of dependence was as high as are seen in western clinic samples. However, we also observed relatively low CO concentrations showing relatively low levels of smoke and therefore nicotine intake. Thus, it is possible that FTND scores may overstate the level of dependence in smokers from Malaysia. At present, this must remain as speculation, but future research needs to examine these issues.

The finding of a difference in success rates across different clinics may seem unsurprising, but this is one of very few studies (Raupach et al., 2008; Stapleton, Lowin, & Russell, 1999) to show such a difference, and a strength of the current study is that it controlled for a wide array of prognostic variables. Such a demonstration is important in establishing a prima facie case that different approaches to behavioral support and skills of practitioners are reflected in different success rates. This provides the starting point for an examination of what are the key differences with a view to determining "best practice" (Michie, Hyder, Walia, & West, in press).

The study found that smokers were more likely to be successful if they decided to stop after they heard about the clinic rather than vice versa. We believe that this has not previously been shown. If this finding is replicated, it suggests that there are merits in clinics seeking to attract smokers who had not been intending to stop. It is reminiscent of the finding in general population samples that smokers who report having stopped without preplanning appeared to be more likely to be successful (Larabie, 2005; West & Sohal, 2006).

The findings relating to smoking motives need to be viewed with caution because the prevalence of the motives was very high leading to little variation. For example, the fact that smoking to relieve boredom emerged as significant in the multivariate analysis with a very high odds ratio is likely to be an artifact. However, this will become clearer with replication.

This study had a number of limitations. Smoking status was based on self-report, and this typically overestimates success rates. However, it seems unlikely that deception would account for the associations observed between the variables. The sample was self-selected and came from an urban setting, but the sample composition was similar to that found in the census (Ministry of Health Malaysia, 2006). The sample was relatively small and this analysis may have missed some associations because of lack of power, but there was no suggestion of an association with dependence and a very clear one with strength of motivation to stop. Some of the predictor variables (e.g., intended NRT use) had very low variance, which severely limited the capacity to detect an association with abstinence. Of greatest significance is the fact that this was a clinic sample, and the findings may not generalize to smokers trying to stop by themselves. This would also be true for western clinic samples, and of course, clinic samples are important in their own right as a focus for research.

In conclusion, this study found that in a smokers' clinic sample in Malaysia, strength of motivation to stop predicted success at stopping in the medium term, while the most widely used measure of nicotine dependence did not. There are many such clinics being established across the world, and it would be desirable if they could routinely collect data on these and other factors to gain a global picture of the role of different factors in stopping smoking with a view to designing appropriately targeted treatment programmes.

Funding

Declaration of Interests

LS has received an honorarium for a talk and travel expenses from Pfizer. RW undertakes research and consultancy for the following developers and manufacturers of smoking cessation treatments: Pfizer, J7J, McNeil, GSK, Nabi, Novartis, and Sanofi-Aventis. RW also has a share in the patent of a novel nicotine delivery device.

References

Abdullah, A. S., Ho, L. M., Kwan, Y. H., Cheung, W. L., McGhee, S. M., & Chan, W. H. (2006). Promoting smoking cessation among the elderly: What are the predictors of intention to quit and successful quitting? *Journal of Aging and Health*, *18*, 552–564. doi:10.1177/0898264305281104

Abdullah, A. S., Lam, T. H., Chan, S. S., & Hedley, A. J. (2004). Which smokers use the smoking cessation Quitline in Hong Kong, and how effective is the Quitline? *Tobacco Control*, *13*, 415–421. doi:10.1136/tc.2003.006460

Abdullah, A. S., Lam, T. H., Chan, S. K., Leung, G. M., Chi, I., Ho, W. W., et al. (2008). Effectiveness of a mobile smoking cessation service in reaching elderly smokers and predictors of quitting. *BMC Geriatrics*, *8*, 25. doi:10.1186/1471-2318-8-25

Baker, T. B., Piper, M. E., McCarthy, D. E., Bolt, D. M., Smith, S. S., Kim, S. Y., et al. (2007). Time to first cigarette in the morning as an index of ability to quit smoking: implications for nicotine dependence. *Nicotine & Tobacco Research*, *9*(Suppl. 4), S555–S570. doi:10.1080/14622200701673480

Chandola, T., Head, J., & Bartley, M. (2004). Socio-demographic predictors of quitting smoking: How important are household factors? *Addiction*, *99*, 770–777. doi:10.1111/j.13600443.2004.00756.x

Clinical Practice Guidelines. (2003). *Treatment of tobacco smoking and dependence 2003*. Disease Control Division, Ministry of Health Malaysia. Retrieved from www.moh.gov.my/attachments/3996

Ferguson, J. A., Patten, C. A., Schroeder, D. R., Offord, K. P., Eberman, K. M., & Hurt, R. D. (2003). Predictors of 6-month tobacco abstinence among 1224 cigarette smokers treated for nicotine dependence. *Addictive behaviors*, *8*, 1203–1218. doi:10.1016/S0306-4603(02)00260-5

Fung, P. R., Snape-Jenkison, S. L., Godfrey, M. T., Love, K. W., Zimmerman, P. V., Yang, I. A., et al. (2005). Effectiveness of hospital-based smoking cessation. *Chest*, *128*, 216–223. doi:10.1378/chest.128.1.216

Goddard, E. (2006). *Smoking and drinking among adults, 2005: General Household Survey*. London: Office of National Statistics. Retrieved from http://www.statistics.gov.uk/downloads/theme_compendia/GHS05/GHS2005_SmokingandDrinking_Report.pdf

Gwaltney, C. J., Shiffman, S., Norman, G. J., Paty, J. A., Kassel, J. D., & Gnys, M. (2001). Does smoking abstinence self-efficacy vary across situations? Identifying context-specificity within the relapse situation efficacy questionnaire. *Journal of Consultative Clinical Psychology*, *69*, 516–527. doi:10.1037/0022-006X.69.3.516

Hagimoto, A., Nakamura, M., Morita, T., Masui, S., & Oshima, A. (2009). Smoking cessation patterns and predictors of quitting smoking among the Japanese general population: A 1-year follow-up study. *Addiction*, *105*, 164–173. doi:10.1111/j.1360-0443.2009.02735.x

Heatherton, T. F., Kozlowski, L. T., Frecker, R. C., & Fagerstrom, K. O. (1991). The Fagerström Test for Nicotine Dependence: A revision of the Fagerström Tolerance Questionnaire. *British Journal of Addiction*, *86*, 1119–1127. doi:10.1111/j.1360-443.1991.tb01879.x

Herd, N., Borland, R., & Hyland, A. (2009). Predictors of smoking relapse by duration of abstinence: Findings from the International Tobacco Control (ITC) Four Country Survey. *Addiction*, *104*, 2088–2099. doi:10.1111/j.1360-0443.2009.02732.x

Hymowitz, N., Cummings, K. M., Hyland, A., Lynn, W. R., Pechacek, T., & Hartwell, T. D. (1997). Predictors of smoking cessation in a cohort of adult smokers followed for five years. *Tobacco Control*, *6*, S57–S62. doi:10.1136/tc.6.suppl_2.S57

Larabie, L. C. (2005). To what extent do smokers plan quit attempts? *Tobacco Control*, *14*, 425–428. doi:10.1136/tc.2005.013615

Lee, C., & Kahende, J. (2007). Factors associated with successful smoking cessation in the United States. *American Journal of Public Health*, *97*, 1503–1509. doi:10.2105/AJPH.2005.083527

Levy, D. T., Romano, E., & Mumford, E. (2005). The relationship of smoking cessation to social demographic characteristics, smoking intensity and tobacco control policy. *Nicotine & Tobacco Research*, *7*, 387–396. doi:10.1080/14622200500125443

Lopez, A. D., Colloshaw, N. E., & Piha, T. (1994). A descriptive model of the cigarette epidemic in developed countries. *Tobacco Control*, *3*, 242–247. doi:10.1136/tc.3.3.242

McDermott, L., Dobson, A., & Owen, N. (2009). Determinants of continuity and change over 10 years in young women's smoking. *Addiction*, *104*, 478–487. doi:10.1111/j.1360-0443.2008.02452.x

McEwen, A., West, R., & McRobbie, H. (2008). Motives for smoking and their correlates in clients attending stop smoking treatment services. *Nicotine and Tobacco Research*, *10*, 843–850. doi:10.1080/14622200802027248

Michie, S., Hyder, N., Walia, A., & West, R. (in press). *Development of a taxonomy of behaviour change techniques used in individual behavioural support for smoking cessation*, Manuscript submitted for publication. Retrieved from http://www.ucl.ac.uk/hbrc/tobacco/publications.html

Ministry of Health Malaysia. (2006). *The third national health and morbidity survey 3 (NHMS 3)*. Smoking. Retrieved from http://library.iku.gov.my/index.aspx?Page=OPAC/OPV.ascx&BookID=892&strType=Book&strTerms=&ID=10100

Monden, C. W., De Graff, N. D., & Kraaykamp, G. (2003). How important are parents and partners for smoking cessation in adulthood? *Preventive Medicine*, *36*, 197–203. doi:10.1016/S0091-7435(02)00026-9

Myung, S. K., Park, J. G., Bae, W. K., Lee, Y. J., Kim, Y., & Seo, H. G. (2008). Effectiveness of proactive Quitline service and predictors of

successful smoking cessation: Findings from a preliminary study of Quitline service for smoking cessation in Korea. *Journal of Korean Medical Science*, *23*, 888–894. doi:10.3346/jkms.2008.23.5.888

Raupach, T., Shahab, L., Neubert, K., Felten, D., Hasenfuss, G., & Andreas, S. (2008). Implementing a hospital-based smoking cessation programme: Evidence for a learning effect. *Patient Education and Counselling*, *70*, 199–204. doi:10.1016/j.pec.2007.10.005

Shiffman, S., Brockwell, S. E., & Pillitteri, J. L. (2008). Individual differences in adoption of treatment for smoking cessation: Demographic and smoking history characteristics. *Drug and Alcohol Dependence*, *93*, 121–131. doi:10.1016/j.drugalcdep.2007.09.005

Sohn, M., Benowitz, N., Stotts, N., Christopherson, D., Kim, K. S., Jang, Y. S., et al. (2008). Smoking behavior in men hospitalized with cardiovascular disease in Korea: A cross-sectional descriptive study. *Heart & Lung*, *37*, 366–379. doi:10.1016/j.hrtlng.2007.11.001

Sperber, A. D., Goren-Lerer, M., Peleg, A., & Friger, M. (2000). Smoking cessation support groups in Israel: A long-term follow-up. *Israel Medical Association Journal*, *2*, 356–360. Retrieved from http://www.ima.org.il/imaj/

Stapleton, J. A., Lowin, A., & Russell, M. A. (1999). Prescription of transdermal nicotine patches for smoking cessation in general practice: Evaluation of cost-effectiveness. *Lancet*, *354*, 210–215. doi:10.1016/S0140-6736(99)90001-6

Sun, H. Q., Guo, S., Chen, D. F., Jiang, Z. N., Liu, Y., Di, X. L., et al. (2009). Family support and employment as predictors of smoking cessation success: A randomized, double-blind, placebo-controlled trial of nicotine sublingual tablets in Chinese smokers. *American Journal of Drug and Alcohol Abuse*, *35*, 183–188. doi:10.1080/00952990902839794

Twardella, D., Loew, M., Rothenbacher, D., Stegmaier, C., Ziegler, H., & Brenner, H. (2006). The diagnosis of a smoking-related disease is a prominent trigger for smoking cessation in a retrospective cohort study. *Journal of Clinical Epidemiology*, *59*, 82–89. doi:10.1016/j.jclinepi.2005.05.003

West, R., Hajek, P., Stead, L., & Stapleton, J. (2005). Outcome criteria in smoking cessation trials: Proposal for a common standard. *Addiction*, *100*, 299–303. doi:10.1111/j.1360-0443.2004.00995.x

West, R., McEwen, A., & Bolling, K. (2001). Smoking cessation and smoking patterns in the general population: A 1-year follow-up. *Addiction*, *96*, 891–902. doi:10.1046/j.1360-0443.2001.96689110.x

West, R., & Sohal, T. (2006). Catastrophic pathways to smoking cessation: Findings from a national survey. *British Medical Journal*, *332*, 458–460. doi:10.1136/bmj.38723.573866.AE

Yang, T., Abdullah, A. S., Mustafa, J., Chen, B., Yang, X., & Feng, X. (2009). Factors associated with smoking cessation among Chinese adults in rural China. *American Journal of Health Behavior*, *33*, 125–134. Retrieved from http://www.ima.org.il/imaj/

Yu, D. K., Wu, K. K., Abdullah, A. S., Chai, S. C., Chai, S. B., Chau, K. Y., et al. (2004). Smoking cessation among Hong Kong Chinese smokers attending hospital as outpatients: Impact of doctors' advice, successful quitting and intention to quit. *Asia-Pacific Journal of Public Health*, *16*, 115–120. doi:10.1177/101053950401600207

Zhou, X., Nonnemaker, J., Sherrill, B., Gilsenan, A. W., Coste, F., & West, R. (2009). Attempts to quit smoking and relapse: Factors associated with success or failure from the ATTEMPT cohort study. *Addictive Behaviors*, *34*, 365–373. doi:10.1016/j.addbeh.2008.11.013