RESEARCH ARTICLE

Modification of a Smoking Motivation Questionnaire for Chinese Medical Students

Chao Jiang[1&], Wen-Jie Sun[2,3&], Yan-Chun Wan[1], Ming-Wei Wei[1], Yong-Ping Mu[4] Siobhan L. Tarver[3], Yong-Qing Gao[2], Tian Hu[5], Chao Xu[6], James Gordon[7], Cindy Xin Feng[8], Yu-Feng Wen[1*]

Abstract

Introduction: Smoking prevalence among the medical students is high in China. Therefore, understanding the smoking motivations of medical students is crucial for smoking control, but currently there are no scales questionnaires customized for probing the smoking motivations of medical students. This aim of study was to test and modify a questionnaire for investigating smoking motivations among medical students. Methods: A cross-sectional survey was conducted among 1,125 medical students at Xuzhou Medical College in China in 2012.The model fit and validity was assessed by confirmatory factor analysis (CFA) and the reliability was tested by single-item reliability, composite reliability, and item-total correlation. Results: The prevalence of smoking was 9.84 % among study population. In the modified scales, the global fit indices identified a CFI value of 0.96, TLI was 0.96, and the RMSEA was 0.063. CFA supported the two dimensional structure of the instrument. The average variance extracted ranged from 0.45 to 0.62. All single-item reliability scores were greater than 0.20, and the composite reliability ranged from 0.74 to 0.91. Conclusion: Modified scales could be the preliminary instrument used in evaluating the smoking motivations of medical students. However, it should be further assessed using other forms and methods of validity and reliability, additional motivations of smoking, and the survey of other medical colleges in China.

Keywords: Smoking motivation questionnaire - medical students - validity and reliability

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Introduction

Smoking Intervention methods by physicians have been recognized potentially as a key factor in the prevention, reduction, and cessation of tobacco use and diseases related to smoking (Hum et al., 2011; Nunes et al., 2013). The physicians' smoking habits, attitudes towards smoking, and advice to patients have tremendously impacted the anti-smoking campaign (Araya et al., 2012). However, in 16 countries, nearly half of practitioners smoke frequently (Pipe et al., 2009). Although medical students know effective cessation-counseling (Kusma et al., 2010; Sreeramareddy et al., 2010), many medical students are smokers, (Warren et al., 2008) (only 3 sites surveyed have smoking rates less than 5% in 48 countries). Therefore, understanding the motivations of the smoking medical students is important for tobacco control.

Reviews of the pharmacological actions of nicotine have determined an association with smoking psychology and physical dependence, and its influence on the biochemical and physiological functions of the brain (Litvin et al., 2010; Philip et al., 2013). However, motivations of initiating smoking are varied and multidimensional, which are upon individual differences. Exposing smokers to either external cues (e.g., pictures or smell of cigarette) or internal cues (e.g., negative affect induction) can increase urge to smoke and other behavioral and physiological responses and the two cues did not interact (Litvin and Brandon, 2010). Most smoking is beginning from adolescence. Approximately 80% of adult smokers begin smoking before 18 years (Philip et al., 2013). Studies on students of Nigeria, India, and Turkey indicate that being male and having parents or friends who smoke were more likely to initiate smoking (Golbasi et al., 2011; Muttappallymyalil et al., 2012; Odukoya et al., 2013; Ozturk et al., 2011). A study with 3, 706 undergraduate students from seven universities in England, Wales, and Northern Ireland found that smoker

[1]School of Public Health, Wannan Medical College, Wuhu, [2]School of Food Science, Guangdong Pharmaceutical University, Zhongshan, [4]Department of Clinical Laboratory Centre, The Affiliated People's Hospital of Inner Mongolia Medical University, Hohhot, China, [3]Department of Global Environmental Health Sciences, [5]Department of Epidemiology, [6]Department of Biostatistics and Bioinformatics, School of Public Health and Tropical Medicine, Tulane University, New Orleans, USA, [7]Department of Economics, Tulane University, [8]School of Public Health, University of Saskatchewan, Saskatoon SK, Canada [&]Equal contributors
**For correspondence: wyf@wnmc.edu.cn*

was low income, or those fathers had at least a bachelor degree, and binge drinkers (Ansari et al., 2012). While smoker was less likely to be healthy students, or those ate more than portions of fruit or vegetables, had never taken illicit drugs (Ansari and Stock, 2012). The medical education and the health risks knowledge of smoking could decrease the prevalence of smoking in adolescence, as the prevalence of smoking was significant higher in non-medical female students than medical female students in Saudi Arabia (Azhar et al., 2012). There is a high shisha smoking among Malaysia medical students because they believed that it does not contains nicotine, carbon monoxide, and tcan not lead to lung cancer, dental problems, and cardiovascular diseases. Moreover, having parents, siblings, and friends smokers of shisha, family problems, problems with friends, financial problems, and university life were all found to significantly associated with smoking status among medical students (Al-Naggar et al., 2012). Some participants also reported that the cardinal motive to smoke was the relief of negative moods such as anxiety, sadness, and stress (Al-Naggar et al., 2011; Spielberger et al., 1982). These factors are even more relevant to medical students considering the process for getting into and thriving in medical school. Thus, the smoking motivation of medical students still needs to be further investigated.

Russell's Smoking Motivation Questionnaire (RSMQ) constructed by Russell et al. (1974), containing 34 items (Russell et al., 1974), was an effective mental scale to evaluate the motives of smoking, and it was first used in West and Russell's study in 1985 as a 20-item scale (West et al., 1985). Recently, the RMSQ combined with the Reason for Smoking Scale (RSS) was translated into several countries (Berlin et al., 2003; Souza et al., 2009) due to its stable factor structure, internal consistency and temporal stability. Now there was an adapted Chinese version.

The Russell Reason for Smoking Questionnaire (RRSQ) has been popular instrument to evaluate risk factors for smoking across China. Yet, it has not been used in medical students to explore the factors of tobacco use, and has not been convinced whether it was appropriate due to the particularity of the medics that they grasped medical knowledge which may disturb their answering. The present study seeks to evaluate the validity and reliability of the subscales constructed from items in the RRSQ among medical students.

Materials and Methods

Study design and Participants

A cross-sectional survey was conducted in Xuzhou medical college in 2012. One thousand and one hundred fifty sophomore, junior and senior students were selected in this survey using cluster sampling. According to the standardized definition given by WHO, a current smoker was defined as a smoker who used tobacco on one or more days in last 30 days prior to the survey and who smoked more than 100 cigarettes in the past year (Global Youth Tabacco Survey Collaborative, 2002). The study was approved by Xuzhou medical college Ethics committee.

Questionnaire

The RRSQ (1999), derived from the RMSQ, contains 24 items which cover a variety of smoking risk factors. The 24 items were grouped into two dimensions, Pharmacology and Social Psychology, and obtained 8 oblique factors: Psychological image, Hand-mouth, Indulgent, Sedative, Stimulation, Addictive, Automatic and Supplementary Scale. Social psychology was identified to separate the psychological image, Hand-mouth and Indulgent factors from others such as pharmacology. Items were scored from 'not at all or uncertain' ('0') to 'very much so' ('3') and scores on the last two factors plus supplementary scale yielded a total dependence score. It was possible to be dependent for 6-point increase of total dependence score and likely to be addictive for 20-point increase.

Procedure

Monitors in 7 faculties helped to release the questionnaires after centralized cultivation, using the same leading words. Two weeks later, 50 students were sampled down to rewrite the RRSQ to evaluate the retest reliability through e-mails they had put on the scales.

Analysis

All analyses were performed using the SPSS version 16.0 and MPLUS version 6.1. Mean score of each item and subscale were obtained.

Construct validity, determining whether an instrument measures a construct as intended, was evaluated by confirmatory factor analysis (CFA), using a mean-adjusted WLS estimator (WLSMV) which was recommended for the analysis of small sample sizes less than 250 and variables with categories less than 5 through MPLUS version 6.1 (Beauducel et al., 2006; Rhemtulla et al., 2012). The degree of model fit with data was assessed by absolute fit indices, including the model Chi-square statistic (c^2), root mean square error of approximation (RMSEA) and incremental fit indices consisting of Tucker-Lewis index (TLI) and comparative fit index (CFI). A 90% confidence interval of REMSA both with p value of close fit was also included. The value of c^2 was not absolute since the Chi-Square statistic lacked power and this may not discriminate between good fitting models and poor fitting models when the sample size was small (Kenny et al., 2003). In general, a value of CFI $\geq$ 0.95 and a cut-off criterion of TLI $\geq$ 0.95 were presently recognized as indicator of good fit (Hu et al., 1999). Another significant fit index was RMSEA, value of which less than 0.08 would signify reasonable model fit (MacCallum et al., 1996).

In regard to convergent validity, spearman correlation coefficient between the scores of subscales and total scale, and those between subscales was judged using SPSS. Average variance extracted (AVE), measuring the amount of variance that was captured by the construct in relation to the amount of variance due to measurement error, was another index of convergent validity. Its recommended acceptable threshold was 0.5 or higher (Bagozzi et al., 1988; Fornell et al., 1981). (The computation formula is as following).

Table 1. Model Fit Indices of First Model and Last Model

	χ^2	TLI	CFI	REMSA	90% CI	*P*-value
First model with 8 factor	351.85	0.96	0.96	0.064	0.048 ~0.078	0.07
Final model with 7 factor	351.65	0.96	0.96	0.063	0.048 ~0.077	0.077

Table 2. Mean Score of Item and Subscale, Factor Loading and *p* value

Order	Item	Mean score	Item λ	*P*-value	Factor	Mean score	Subsca-le λ	*P*-value
1	I feel I look more gentle when smoking.	1.07	0.67	0	Psychological image	1.06	0.82	0
2	I feel I look more mature and sophisticated when smoking.	1.04	0.74	0				
3	I feel more attractive when to the opposite sex when smoking.	1.08	0.74	0				
4	Having a cigarette in hand is also one of the fun.	0.93	0.55	0	Hand-mouse	0.92	0.91	0
5	I feel something is missing from my hand when I don't smoke.	0.91	0.7	0				
6	I smoke for there could be something in my mouth.	0.94	0.74	0				
7	I like a cigarette best when I am having a quiet rest	0.96	0.75	0	Indulgent	0.96	0.92	0
8	I get a definite pleasure whenever I smoke.	0.93	0.83	0				
9	I want to smoke most when I am comfortable and relaxed.	0.98	0.63	0				
10	I smoke more when I am worried about something.	1.27	0.61	0	Sedative	1.27	0.95	0
11	I smoke more when I am unhappy.	1.29	0.71	0				
12	I light up a cigarette when I feel angry about something.	1.25	0.8	0				
13	I light up a cigarette without realizing I still have one burning in the ash tray.	0.91	0.69	0	Automatic	0.95	0.98	0
14	I smoke automatically without even being aware of it.	0.95	0.68	0				
15	I find myself smoking without remembering lighting up.	0.98	0.72	0				
16	I get a definite lift and feel more alert when smoking.	0.98	0.7	0	Stimulation	1.1	0.91	0
17	Smoking helps to keep me going when I am tired.	1.17	0.87	0				
18	Smoking helps me to think and concentrate.	1.15	0.78	0				
19	When I have run out cigarettes I find it almost unbearable until I can get them.	0.93	0.83	0	Addictive	0.87	0.97	0
20	I get a real gnawing hunger to smoke when I haven't smoked for a while.	0.76	0.79	0				
21	I am very much aware of the fact when I am not smoking.	0.78	0.68	0				
22	I get define craving to smoke when I have to stop for a while.	0.72	0.79	0				
23	I would find it difficult to go without smoking for as long as a week.	1.19	0.79	0				
24	I find it difficult to go as long as an hour without smoking.	0.86	0.82	0				

$$\rho_{\eta} = \frac{\sum_{i=1} \lambda_i^2}{\sum_{i=1} \lambda_i^2 + \sum \theta_i} \quad (1)$$

The quality of individual item and reliability of measurement were assessed by single-item reliability and subscale reliability, all of which were evaluated by the results from CFA. According to classic definition of reliability, the real variation of the.and its recommended value was 0.2 or higher (Jöreskog., 1971). q is the residual variance.

$$\rho_i = \frac{\lambda_i^2}{\lambda_i^2 + \theta_i} \quad (2)$$

Composite reliability (CR) reflecting the internal consistency of each subscale, was calculated as following when the measurement error was uncorrelated (Jöreskog., 1971). The meaning of 1 was the standardized factor loading and that of q was the residual variance. The recommended value of CR was 0.6 or higher (Bagozzi and Yi, 1988; Fornell and Larcker, 1981). Whether the spearman correlation coefficient between the items and their own score were higher than the correlation coefficient between these items, and remainder subscales was also assessed to evaluate whether each subscale represented a separate domain through SPSS.

$$\rho_c = \frac{\left(\sum_{i=1} \lambda_i\right)^2}{\left(\sum_{i=1} \lambda_i\right)^2 + \sum_{i=1} \theta_i} \quad (3)$$

Results

Of 1, 150 students who participated in the study, 1128 (557 men and 571 women) were included in the analysis and 22 were excluded because of their empty and incomplete questionnaires. Among those medical students, 111 students were identified as a current smoker. All of these smokers were male, and 27, 34, and 50 were sophomore, junior, and senior students, respectively.

Validity

Through the result of first model, model fitting was found to be satisfactory (Table 1). However, the factor loading of first-order factor supplementary was higher than 1 and the correlation coefficient between factor 'supplementary' and factor 'addictive' was 0.99, meaning multi-colinearity existed between Supplementary and Addictive. With West and Russell's point of view (West and Russell, 1985), therefore, Supplementary and Addictive were converged to the same factor Addictive.

After correction of the scales the c^2 was 351.65, TLI was 0.96, CFI was 0.96, and REMSA was0.064. The 90% confidence interval of REMSA was 0.048 to 0.077, and test for goodness of fit showed a p-value of 0.077) (Table 1).

The mean score of each item and subscale of corrected scale are shown in Table 2. Model fit results showed that first-order factors Psychological Image, Hand-Mouth Indulgent, Sedative, Automatic, Stimulation and Addictive, as the indicators of second-order factors Pharmacology and Social psychology, had the high factor loadings in this model (0.82, 0.91, 0.92, 0.95, 0.98, 0.91,

Table 3. Factor Correlation and AVE Value

	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	Total	ϱ_v
Factor1	1								0.52
Factor2	0.55	1							0.45
Factor3	0.44	0.65	1						0.55
Factor4	0.53	0.58	0.67	1					0.5
Factor5	0.53	0.66	0.64	0.6	1				0.48
Factor6	0.6	0.54	0.64	0.7	0.6	1			0.62
Factor7	0.61	0.7	0.71	0.7	0.7	0.72	1		0.62
Total	0.72	0.8	0.82	0.82	0.8	0.85	0.9	1	

Table 4. Residual Variance, Single-item Reliability, Composite Reliability and Item-total Correlation

Item	θ	ϱ_i	Subscale	ϱ_c	Item-own correlation	Item-remainder correlation
1	0.55	0.45	Psychological	0.76	0.81	0.54
2	0.45	0.55	image		0.8	0.56
3	0.45	0.55			0.79	0.58
4	0.7	0.3	Hand-mouse	0.7	0.77	0.49
5	0.5	0.5			0.75	0.62
6	0.45	0.55			0.73	0.62
7	0.44	0.56	Indulgent	0.78	0.76	0.64
8	0.3	0.7			0.85	0.7
9	0.6	0.4			0.76	0.54
10	0.63	0.37	Sedative	0.75	0.74	0.51
11	0.49	0.51			0.81	0.65
12	0.37	0.63			0.8	0.71
13	0.52	0.48	Automatic	0.74	0.75	0.59
14	0.54	0.46			0.73	0.58
15	0.48	0.51			0.85	0.66
16	0.51	0.49	Stimulation	0.83	0.78	0.64
17	0.24	0.76			0.84	0.73
18	0.4	0.6			0.84	0.66
19	0.31	0.69	Addictive	0.91	0.79	0.43
20	0.38	0.62			0.72	0.44
21	0.53	0.47			0.7	0.54
22	0.38	0.62			0.7	0.49
23	0.38	0.63			0.78	0.69
24	0.32	0.68			0.8	0.74

0.97 separately). The factor loading of each item was from 0.61 to 0.87 which was significant.

The spearman correlation coefficients for content validity between factors and total scale ranged from 0.44 to 0.90. The AVE values met the criterion of 0.5, ranging from 0.66 to 0.78 (Table 3).

Reliability

Considering the results above, single-item reliability ranged from 0.30 to 0.76 for all subscales. The results with regard to composite reliability showed all coefficients were greater than 0.6. Each of correlation coefficients between items and their own subscales was greater than that between this item and the remainder subscale, showing all subscales represent separate domains (Table 4).

Discussion

Although smoking questionnaires have been used widely for studying motivation of using tobacco, few of them were customized for medical students. Our study assessed the reliability and validity of the pilot questionnaire designed specifically for this population. In this study, approximately 10% of medical students smoked, who were all males. This finding of high prevalence of smoking among male medical students is consistent with the literature (Warren et al., 2008).

Our results also showed that multi-colinearity emerged in the original Russell reason for smoking questionnaire (RMSQ) when it was used in medical students. The strong correlation between factor Addictive and Supplementary may be attributable to the medic's prior understanding of addiction reflected by the items. In addition, Addictive and Supplementary can be treated as the same factor (West and Russell, 1985). Due to their high correlation, the last model of RRSQ had 7 factors instead of 8 identified in the initial version. With the current version, the goodness of model fit was satisfactory due to the significant CFI, TLI and REMSA. The correlation between factors and average variance extracted suggest that the last model had a good convergent validity. Each factor could account for more than 50% variance captured by the construct. Acceptable single-item reliability, composite reliability and higher correlation of item-own confirmed the quality and reliability of the measure and its items.

To our knowledge, this is the first study conducted to assess the reliability and validity of the standard smoking questionnaire RRSQ within medical students this special population. Nevertheless, our study had some limitations. First, Flynn (Flynn et al., 2001) suggested that a ratio of five responses per parameters was required to obtain reliable estimates based on 120 participants. Our study had slightly lower sample size, though the scale seemed to be a reliable measure of smoking motivation according to the item-single reliability, composite reliability and validity.

Second, the study was conducted in one medical college and all the participants are male It might not be generalized to other medical colleges in national across More medical colleges to assess the reliability and validity of the scale used to ensure similar gender distribution are warranted. Third, smoking motivation, such as personal relationship and personal resource needed to address (Bowen et al., 2012). The test-retest reliability should be examined for these scales using the second questionnaire. Due to the low response rate , this validation study is not avaiable.

In conclusion, our results indicate moderate to high reliability and validity of the RRSQ among medical students. Further investigation is warranted to validate this tool and examine its generalizability.

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References

Naggar RA, Dubai SA, Naggar TH, et al (2011). Prevalence and of smoking associated factors among Malaysian University students. *Asian Pac J Cancer Prev*, **12**, 619-24.

Al-Naggar RA, Bobryshev YV (2012). Shisha smoking and associated factors among medical students in Malaysia. *Asian Pac J Cancer Prev*, **13**, 5627-32.

Araya A MV, Leal SF, Huerta GP, et al (2012). The influence of smoking habits of Chilean physicians on the use of the structured medical advice about smoking. *Rev Med Chil*, **140**, 347-52

Azhar A, Alsayed N (2012). Prevalence of smoking among female medical students in Saudai Arabia. *Asian Pac J Cancer Prev*, **13**, 4245-8.

Bagozzi RP, Yi Y (1988). On the evaluation of structural equation models. *J Acad Market Sci*, **16**, 74-94.

Beauducel A, Herzberg PY (2006). On the performance of maximum likelihood versus means and variance adjusted weighted least squares estimation in CFA. *Struc Equ Mod* **13**, 186-203.

Berlin I, Singleton EG, Pedarriosse AM, et al (2003). The Modified Reasons for Smoking Scale: factorial structure, gender effects and relationship with nicotine dependence and smoking cessation in French smokers. *Addiction*, **98**, 1575-83.

Bowen S, Kurz AS (2012). Smoking, nicotine dependence, and motives to quit in Asian American versus Caucasian college students. *Nicotine Tob Res*, **14**, 1235-40.

El Ansari W, Stock C (2012). Factors associated with smoking, quit attempts and attitudes towards total smoking bans at university: a survey of seven universities in England, Wales and Northern Ireland. *Asian Pac J Cancer Prev*, **13**, 705-14.

Flynn LR, Pearcy AD (2001). Four subtle sins in scale development: some suggestions for strengthening the current paradigm. *Int J Market Res*, **43**, 409-24.

Fornell C, Larcker DF (1981). Evaluating structural equation models with unobservable variables and measurement error. *J Market Res (JMR)*, **18**, 1.

Global Youth Tabacco Survey Collaborative (2002). Tobacco use among youth: a cross country comparison. *Tobacco Control*, **11**, 252.

Golbasi Z, Kaya D, Cetindag A, et al (2011). Smoking prevalence and associated attitudes among high school students in Turkey. *Asian Pac J Cancer Prev*, **12**, 1313-6.

Hu LT, Bentler PM (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, **6**, 01-55.

Hum AM, Robinson LA, Jackson AA, et al (2011). Physician communication regarding smoking and adolescent tobacco use. *Pediatrics*, **127**, 1368-74.

Jöreskog KG (1971). Statistical analysis of sets of congeneric tests. *Psychometrika*, **36**, 109-33.

Kenny DA, McCoach DB (2003). Effect of the number of variables on measures of fit in structural equation modeling. *Structural Equation Modeling*, **10**, 333-51.

Kusma B, Quarcoo D, Vitzthum K, et al (2010). Berlin's medical students' smoking habits, knowledge about smoking and attitudes toward smoking cessation counseling. *J Occup Med Toxico*, **l5**, 9.

Litvin EB, Brandon TH (2010). Testing the influence of external and internal cues on smoking motivation using a community sample. *Exp Clin Psychopharmacol*, **18**, 61.

MacCallum RC, Browne MW, Sugawara HM (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychol Meth*, **1**, 130.

Muttappallymyalil J, Divakaran B, Thomas T, et al (2012). Prevalence of tobacco use among adolescents in north Kerala, India. *Asian Pac J Cancer Prev*, **13**, 5371-4.

Nunes T, Etchevers MJ, Merino O, et al (2013). High smoking cessation rate in Crohn's disease patients after physician advice–The TABACROHN Study. *J Crohns Colitis*, **7**, 202-7.

Odukoya OO, Odeyemi KA, Oyeyemi AS, et al (2013). Determinants of smoking initiation and susceptibility to future smoking among school-going adolescents in Lagos State, Nigeria. *Asian Pac J Cancer Prev*, **14**, 1747.

Ozturk C, Bektas M, Yilmaz E, et al (2011). Smoking status of Turkish nursing students and factors affecting their behavior. *Asian Pac J Cancer Prev*, **12**, 1687-92.

Philip PM, Parambil NA, Bhaskarapillai B, et al (2013). Evaluation of a specially designed tobacco control program to reduce tobacco use among school children in Kerala. *Asian Pac J Cancer Prev*, **14**, 3455-9.

Pipe A, Sorensen M, Reid R (2009). Physician smoking status, attitudes toward smoking, and cessation advice to patients: an international survey. *Patient Educ Couns*, **74**, 118-23.

Rhemtulla M, Brosseau-Liard PE, Savalei V (2012). When can categorical variables be treated as continuous? A comparison of robust continuous and categorical SEM estimation methods under suboptimal conditions. *Psychol Methods*, **17**, 354.

Russell MAH, Peto J, Patel UA (1974). The classification of smoking by factorial structure of motives. Journal of the Royal Statistical Society. *Series A (General)*, 313-46.

Souza, ESTD, Crippa JADS, Pasian SR, et al (2009). Modified Reasons for Smoking Scale: translation to Portuguese, cross-cultural adaptation for use in Brazil and evaluation of test-retest reliability. *J Bras Pneumol*, **35**, 683-9.

Spielberger CD, Jacobs GA (1982). Personality and smoking behavior. *J Pers Assess*, **46**, 396-403.

Sreeramareddy CT, Suri S, Menezes RG, et al (2010). Self-reported tobacco smoking practices among medical students and their perceptions towards training about tobacco smoking in medical curricula: A cross-sectional, questionnaire survey in Malaysia, India, Pakistan, Nepal, and Bangladesh. *Subst Abuse Treat Prev Policy*, **5**, 29.

Warren CW, Jones NR, Chauvin J (2008). Tobacco use and cessation counselling: cross-country. Data from the Global Health Professions Student Survey (GHPSS), 2005–2007. *Tobacco Control*, **17**, 238-47.

West RJ, Russell AH (1985). Pre-abstinence smoke intake and smoking motivation as predictors of severity of cigarette withdrawal symptoms. *Psychopharmacol*, **87**, 334-6.